

# **EXHIBIT 3**

**CONFIDENTIAL: UNDER PROTECTIVE ORDER**

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

Anne de Lacour, Andrea Wright, and Loree  
Moran, individually and on behalf of all others  
similarly situated,

Plaintiffs,

v.

Colgate-Palmolive Co., and Tom's of Maine  
Inc.,

Defendants.

Case No. 1:16-cv-08364

**REBUTTAL EXPERT REPORT OF PROFESSOR DAVID REIBSTEIN  
AUGUST 23, 2022**

## TABLE OF CONTENTS

I.	Introduction and Qualifications .....	1
A.	Assignment .....	1
B.	Summary of Conclusions .....	1
C.	Qualifications .....	5
D.	Compensation .....	7
E.	Materials Considered .....	8
II.	Background and Allegations.....	8
III.	Overview of Dennis Report .....	11
A.	Survey Design .....	12
1.	Toothpaste Survey .....	13
2.	Deodorant Survey .....	18
B.	Survey Results and Analysis.....	21
IV.	Response to the Dennis Report.....	25
A.	Conjoint Analysis Is Not the Appropriate Tool to Measure a Price Premium, If Any, Associated with the Challenged Claim Because Actual Sales Data Are Available .....	25
B.	Dr. Dennis’ Conjoint Survey Design Cannot be Relied Upon to Provide Accurate Measures of Consumer Preferences for the Challenged “Natural” Claim .....	28
1.	Dr. Dennis’ survey design inflates the importance of the challenged “natural” claim by focusing respondents on the claim and omitting other attributes that might play a role in the choice process .....	28
2.	Dr. Dennis’ survey design includes more features than respondents can reasonably be expected to process, resulting in choice tasks that are cognitively burdensome and likely to produce invalid results.....	35
3.	Dr. Dennis’ toothpaste survey signals to respondents that they should consider product ingredients, likely increasing respondents’ reliance on product descriptions relating to ingredients such as the “natural” claim .....	41
4.	Dr. Dennis’ attribute for the “natural” claim is not well-defined, reducing the validity of the choice data generated .....	44

5.	Dr. Dennis’ cognitive interviews and “pretests” are insufficient to ensure that the attributes and levels included in his survey were well-defined and that respondents understood the survey questions as intended .....	50
C.	Dr. Dennis’ Survey Sample Is Inadequate and Cannot be Relied on to Draw Conclusions about Damages to Class Members .....	56
1.	The vast majority of Dr. Dennis’ survey samples are not members of the classes and any estimates calculated based solely on responses of potential class members are likely to be subject to a larger degree of measurement error .....	56
2.	Dr. Dennis’ flawed survey design reduces the number of times “natural” was presented to respondents, further reducing his effective sample size.....	58
3.	Dr. Dennis’ survey sample includes consumers who were covered under a previous settlement .....	60
D.	Dr. Dennis’ Price Premium Analysis Does Not Account for Supply-side Factors and, As Such, His Price Premium Estimates Represent Theoretical Willingness to Pay Values and Not “But-For” Market Prices.....	62
1.	Conducting a market simulation does not account for supply-side factors as it measures consumer reaction under the assumption of no competitive reactions .....	63
2.	Incorporating “market-based attributes” in his conjoint design does not account for supply-side factors in the “but-for” world .....	67
3.	Holding quantity fixed does not account for supply-side factors .....	68
4.	Including a “none” option does not account for supply-side factors .....	71
E.	Dr. Dennis’ Price Premium Analysis Is Unsound and Generates Implausible Results that Render It Unusable for Purposes of Assessing the Impact of the Challenged “Natural” Claim.....	73
1.	The data underlying Dr. Dennis’ price premium calculations are illogical and internally inconsistent.....	73
2.	Dr. Dennis’ analysis generates unreasonably high price premiums at lower price points, calling into question the validity of the analysis .....	75
3.	Dr. Dennis’ analysis generates implausible price premium estimates for the included product descriptions exceeding the price of the entire product.....	77
F.	Dr. Dennis’ Survey Results Reveal Substantial Heterogeneity in the Value of the Challenged “Natural” Claim Across Consumers,	

	Suggesting that a Uniform Price Premium Is Inappropriate for Purposes of Calculating Damages .....	80
V.	Conclusion .....	85

## I. INTRODUCTION AND QUALIFICATIONS

### A. Assignment

1. I, David Reibstein, submit this expert report on behalf of Colgate-Palmolive Co. (“Colgate-Palmolive”) and Tom’s of Maine Inc. (“Tom’s”) (collectively, “Defendants”) in the above captioned case. I have been asked to review and analyze the opinions expressed in the report submitted by Dr. J. Michael Dennis on July 8, 2022<sup>1</sup> on behalf of Anne de Lacour, Andrea Wright, and Loree Moran (together, “Plaintiffs”).

2. This report summarizes the opinions that I have formed to date. I may modify my opinions, if necessary and allowed, based on further review and analysis of information provided to me subsequent to the filing of this report.

### B. Summary of Conclusions

3. Based on the standards applicable to the field of marketing, my review and analysis of Dr. Dennis’ conjoint surveys reveal a number of serious flaws which suggest that his survey results are invalid and cannot be relied upon for purposes of calculating damages to the classes. I summarize these flaws below.

- ***Conjoint analysis is not the appropriate tool to measure the price premium, if any, associated with the “natural” claim because actual sales data are available.***
- A conjoint survey is unnecessary because relevant marketplace data exist. I understand that Tom’s made certain changes pertaining to the “natural” label on its toothpaste and deodorant products over time, including removing the “natural” claim from certain deodorant products in 2020 and 2021. This allows for comparison of sales and prices with and without the challenged claim. While survey data are often used to estimate the impact

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<sup>1</sup> Declaration and Expert Report of J. Michael Dennis, Ph.D., July 8, 2022 (“Dennis Report”). I have also reviewed the declaration submitted by Mr. Colin B. Weir and respond to some of Mr. Weir’s opinions as they relate to opinions offered by Dr. Dennis. Declaration of Colin B. Weir, July 22, 2022 (“Weir Report”).

of product changes when relevant marketplace data are unavailable, the availability of such data renders Dr. Dennis' conjoint analysis unnecessary for the question of calculating damages here.

- ***Dr. Dennis' survey design suffers from several flaws that increase the amount of noise in the survey results and lead to inflated estimates of the value of the "natural" claim.***
  - Dr. Dennis' toothpaste and deodorant surveys inflate the importance of the challenged "natural" claim by omitting marketplace context and focusing respondents on the claim. Dr. Dennis' surveys omit important features that may influence consumer choices for toothpaste and deodorant products, thereby increasing the importance of the challenged "natural" claim and other attributes included in his survey. Further, Dr. Dennis' conjoint surveys omit the context and information provided by the product packaging, which likely leads respondents to place more weight on the "natural" claim than they would in reality.
  - Despite Dr. Dennis' claims that his surveys were "relatively simple and cognitively easy," Dr. Dennis' flawed survey design included 14 different attributes for his toothpaste survey and 12 different attributes for his deodorant survey. This is considerably more attributes than respondents could reasonably be expected to process. As such, Dr. Dennis' survey design likely imposed substantial cognitive burden on respondents, reducing the validity and reliability of the survey results.
  - Dr. Dennis' toothpaste survey includes a flawed presentation of the "Ingredients" attribute that primes respondents to think about product ingredients, making the "natural" claim more salient to respondents in completing the choice tasks. Further, Dr. Dennis' survey presents the "Ingredients" attribute in a way that makes it difficult to review and compare ingredients across product options in the choice exercises. Given that the "Ingredients" information was obscured during the choice tasks, cues to consider product ingredients may have further increased the weight respondents placed on other information pertaining to ingredients that was more easily accessible—*i.e.*, the challenged "natural" claim.
  - Dr. Dennis' surveys do not provide any information about how respondents should interpret the "natural" claim. In reality, however, consumers have access to additional information about the meaning of the "natural" claim on Tom's website (which the packaging of the at-issue products explicitly directs consumers to review). As such, the results generated by Dr. Dennis' surveys do not shed light on consumer preferences for the "natural" claim in the presence of this additional information available in the real-world purchasing environment. Further, Dr. Dennis does not adequately describe the implication of the *absence* of the "natural" claim, thereby introducing additional uncertainty and obscuring the interpretation of his survey results.

- Dr. Dennis’ cognitive interviews and “pretests” are insufficient to demonstrate that respondents understood the attributes, levels, and choice tasks presented in his surveys.
- ***In addition to these flaws in the survey design, Dr. Dennis’ survey sample is inadequate and cannot be used to draw conclusions about damages to class members.***
  - The vast majority of respondents in Dr. Dennis’ survey samples are not residents of New York, California, or Florida and therefore are not members of the classes. Dr. Dennis’ survey samples include less than 130 respondents per relevant state, falling far short of even Dr. Dennis’ own threshold for “robust quantitative research.” Dr. Dennis has not established that the respondents from non-class states are similar to those within the class states. Any conjoint estimates (*e.g.*, price premiums) calculated based on responses of New York, California, or Florida residents alone are likely to be subject to a larger degree of measurement error.
  - Dr. Dennis’ flawed survey design reduces the number of times the “natural” claim was presented to respondents, further reducing the amount of data collected relevant to estimating the value of the challenged “natural” claim to members of the classes. This compounds the issue of Dr. Dennis’ already small sample of residents of the relevant states, further contributing to the inadequacy of Dr. Dennis’ sample for estimating the value of the challenged “natural” claim to class members.
  - In addition, Dr. Dennis’ samples likely include a significant number of respondents who were covered under a previous settlement and therefore are barred from suing Tom’s and are properly excluded from the class in this matter. This further reduces the size of the Dr. Dennis’ sample in the relevant states, exacerbating the measurement issues discussed above.
- ***Dr. Dennis’ analysis does not account for supply-side factors and therefore cannot estimate a market price premium associated with the “natural” claim.***
  - Dr. Dennis’ use of Sawtooth’s market simulator does not account for supply-side factors. As noted in a Sawtooth reference guide cited by Dr. Dennis, the market simulator measures consumer reaction (in the form of changes to consumer preference shares) under the assumption of “no reaction by the competition.” While the market simulator can shed light on the likely changes in demand that would be observed as a result of a change in Tom’s toothpaste and deodorant product offerings, it makes no attempt to predict how competitors might change their behavior in light of changes to the Tom’s products’ claims and pricing. Without incorporating additional information about the supply-side and competitive responses, the market simulation tool cannot predict equilibrium outcomes.



- Dr. Dennis' inclusion of actual prices for the toothpaste and deodorant products presented in his conjoint survey does not account for supply-side factors. Actual prices incorporate *historical* best responses of each competitor in the marketplace, but do not reflect the optimal pricing decisions from each competitor in the counterfactual world in which the at-issue Tom's products do not include the "natural" claim. Likewise, assuming that quantity supplied stays constant in the but-for world does not account for how competitive responses and other supply-side factors influence equilibrium outcomes in the but-for world.
- Despite Dr. Dennis' claims, including a "none option" in the conjoint survey design does not allow for identification of the marginal consumer's willingness to pay and does not eliminate the need to consider supply-side factors. As described by Dr. Daniel McFadden, whom Dr. Dennis cites in his report, "[t]he marginal consumer is the consumer whose [willingness to pay] is equal to the market price and one cannot compute a market price based on even a validly designed conjoint analysis alone."
- ***Dr. Dennis' price premium analysis generates unrealistic results, rendering it unusable for purposes of assessing the impact of the challenged "natural" claim.***
- Dr. Dennis artificially imposes constraints to require his partworth estimates to comport to fundamental economic reasoning that consumers prefer paying less to more, all else equal. However, respondents did not actually respond to his survey in that manner. Removing Dr. Dennis' artificial constraints, and instead using the respondents' actual answers, reveals that this fundamental economic reasoning was violated by more than two-thirds of his sample for both the toothpaste and deodorant surveys. These results call into question the validity of the data generated by his conjoint surveys with respect to price and, in turn, cast doubt on any analyses based on those data.
- Dr. Dennis only presented the results of his price premium analysis at the highest price point tested in each of his surveys. However, re-running Dr. Dennis' price premium analysis at his lower price points, which should be equally valid, results in unreasonably high price premium estimates. For example, at a base price of [REDACTED], Dr. Dennis' deodorant simulation suggests that the "natural" claim alone accounts [REDACTED]. These results call in to question the validity of Dr. Dennis' methodology and resulting price premium estimates at *any* price point.
- Applying Dr. Dennis' price premium analysis to other product descriptions included on Tom's products generates price premium estimates that together *exceed* the base price of the tested product, even without accounting for other attributes tested by Dr. Dennis (such as brand) and other attributes not tested by Dr. Dennis. These results are implausible and

discredit Dr. Dennis' analysis and interpretation of his "price premium" estimates for the "natural" claim.

- ***Dr. Dennis' survey results reveal substantial heterogeneity in the value of the challenged "natural" claim, suggesting that a uniform price premium is inappropriate for calculating damages for individual class members.***
- My analysis of Dr. Dennis' data reveals substantial heterogeneity in the value of the challenged claim among respondents. In fact, Dr. Dennis' data imply that some respondents prefer the absence of the "natural" claim over its inclusion—that is, they would have been willing to pay more if the "natural" claim was not included in Tom's toothpastes and deodorant products. Further, Dr. Dennis' results suggest a wide range of individual willingness to pay for the "natural" claim across respondents, demonstrating that consumers have different preferences and have not suffered equal harm from the inclusion of the challenged "natural" claim.

### **C. Qualifications**

4. I am the William Stewart Woodside Professor and Professor of Marketing at the Wharton School of Business at the University of Pennsylvania. I have been teaching Marketing classes at the graduate level for more than 25 years. Classes that I have taught include Marketing Strategy and Marketing Research in the Wharton MBA Program, as well as Competitive Marketing Strategy, Marketing Metrics, Pricing Strategies, and various other programs for Wharton's Executive Education Program. I am currently teaching the Introductory Marketing classes for first-year MBA students at Wharton, Wharton's Executive MBA Program, senior executives in Wharton's Advancement Management Program, and in several other of Wharton's Executive Education Programs. Over the course of my teaching career, I have been honored with more than 30 teaching awards. For several years, I was the Vice Dean of the Wharton School of Business at the University of Pennsylvania and the Director of the Graduate Division.

5. My research focuses on competitive marketing strategies, marketing metrics, and product line decisions, among other areas. My research on competitive marketing strategies addresses competitors' reactions to marketing actions, offering companies insight into ways to

anticipate these reactions and use them to develop effective strategies. I have authored or co-authored more than 50 articles published in top-tier academic journals, including *Marketing Science*, *Journal of Marketing Research*, *Journal of Consumer Research*, *Harvard Business Review*, *Marketing Letters*, *Journal of Marketing*, and *The International Journal of Research in Marketing*. I am also the author or co-author of several books and book chapters on subjects that include competitive marketing strategy, global branding, and marketing performance measurement, among others. I have extensive experience in survey design having conducted dozens, if not hundreds, of surveys both for my own research and in my consulting work outside of litigation cases. I have taught marketing research courses at Wharton, Harvard Business School, and Stanford's Graduate School of Business where I covered survey research and survey design.

6. I have extensive experience and expertise in conjoint design and analysis specifically. Many of the studies I have conducted have been conjoint studies. I have published research in top marketing journals about conjoint design and its reliability and this research has been frequently cited in the academic community. In addition, I have published books that discuss the design of conjoint surveys and appropriate application of their results.<sup>2</sup> I have presented on topics relating to conjoint analysis at the Marketing Science conferences (including those in the U.S., as well as abroad, such as in Germany and Italy), "Marketing Strategy Meets Wall Street" conferences, and the Marketing Science Institute. I have given lectures covering conjoint analysis topics to both students as well as large groups of executives while working with companies around the world on implementing and incorporating findings from conjoint analysis into their marketing strategy (including Google, HP, Intel, Verizon, Shell, and British Airways). I have also been asked

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<sup>2</sup> See, e.g., Bendle, N.T., P.W. Farris, P.E. Pfeifer, and D.J. Reibstein, *Marketing Metrics*, Second Edition, Pearson Education, 2010.

to opine on issues relating to the proper design and interpretation of conjoint studies in numerous litigation matters.

7. I served on the Board of the American Marketing Association for several years, some of that time as the Chairman and several years on the Executive Committee of the Board. I am a former Executive Director of the Marketing Science Institute and consult extensively on marketing issues with companies worldwide. Topics on which I have been asked to consult in the past include marketing strategy, marketing resource allocation, marketing metrics, sales force planning and incentives, branding, brand management, product line extensions, marketing research, and other marketing activities.

8. I received my Ph.D. from Purdue University and B.S. and B.A. degrees from the University of Kansas. In 2005, I received the John S. Day Distinguished Alumni Academic Service Award from Purdue University's Krannert School of Management, an honor given to graduates whose service within the academic community reflects the spirit and service of former Krannert Dean John Day. A copy of my CV, together with a list of the trial and deposition testimony I have given in the last four years, is attached as Exhibit 1.

**D. Compensation**

9. I have billed the Defendants on a time-and-materials basis for my work. My hourly billing rate is \$1,200, which is my standard rate. In addition, I receive compensation based on the professional fees of the Analysis Group. My compensation is not contingent on my findings, testimony rendered, or on the outcome of this litigation.

## **E. Materials Considered**

10. In undertaking my analysis, I have considered information from a variety of sources, which are identified in this report and the accompanying exhibits or listed in the attached Exhibit 2. I also have relied upon my professional judgment and expertise, gathered from many years of marketing and survey analysis in a variety of industries. In preparing this report, I have been assisted by employees of the Analysis Group, who have provided support to me under my direction and supervision.

## **II. BACKGROUND AND ALLEGATIONS**

11. Founded in 1970, Tom's is a leading manufacturer of a variety of personal care products, including oral care, deodorant and antiperspirant, and bath and body products.<sup>3</sup> In addition to providing "products that are good for you and the planet," Tom's describes itself as committed to "help[ing] solve some of the world's biggest social and environmental problems."<sup>4</sup> Specifically, Tom's advertises its goals to reduce its greenhouse gas emissions, conserve water, send less waste to landfill, and improve the sustainability of its packaging.<sup>5</sup> In addition, Tom's is a Certified B corporation and emphasizes that it donates "10 percent of [its] profits each year to nonprofits promoting health, education, and the environment."<sup>6</sup> Tom's was acquired by Colgate-Palmolive in 2006.<sup>7</sup>

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<sup>3</sup> <https://www.tomsofmaine.com/products> (viewed 7/18/2022); <https://www.tomsofmaine.com/the-backstory> (viewed 7/18/2022).

<sup>4</sup> <https://www.tomsofmaine.com/our-promise/our-mission#tab-618033439-2> (viewed 7/18/2022).

<sup>5</sup> <https://www.tomsofmaine.com/our-promise/our-mission#tab-618033439-2> (viewed 7/18/2022).

<sup>6</sup> <https://www.tomsofmaine.com/our-promise/our-mission#tab-618033439-2> (viewed 7/18/2022).

<sup>7</sup> <https://www.tomsofmaine.com/the-backstory> (viewed 7/18/2022).

12. In this matter, Plaintiffs allege that the labeling on certain Tom's products is false and misleading.<sup>8</sup> Specifically, Plaintiffs allege that Defendants make false and misleading "natural" claims about Tom's toothpaste and deodorant products when those products contain ingredients that are "synthetic and highly chemically processed."<sup>9</sup> Examples of the "natural" labels on Tom's toothpaste products and Tom's deodorant products that are at issue in this case are shown below.<sup>10</sup>



<sup>8</sup> First Amended Class Action Complaint, December 9, 2016 ("Complaint"), at ¶ 1.

<sup>9</sup> Complaint, at ¶¶ 1, 16, 18, 20.

<sup>10</sup> Complaint, at ¶¶ 15, 17; <https://www.walmart.com/ip/Toms-Of-Maine-Toothpaste-Enamel-Strength-Peppermint-4-Oz-Case-Of-6/43771085> (viewed 8/17/2022); [https://www.amazon.com/Toms-Maine-Original-Deodorant-Unscented/dp/B00TU4CODS/ref=sr\\_1\\_9?crid=23KLEC38SW61G&keywords=tom%27s+of+maine+original+unscented&qid=1660764840&s=beauty&prefix=tom%27s+of+maine+original+unscented%2Cbeauty%2C93&r=1-9](https://www.amazon.com/Toms-Maine-Original-Deodorant-Unscented/dp/B00TU4CODS/ref=sr_1_9?crid=23KLEC38SW61G&keywords=tom%27s+of+maine+original+unscented&qid=1660764840&s=beauty&prefix=tom%27s+of+maine+original+unscented%2Cbeauty%2C93&r=1-9) (viewed 8/17/2022).



13. Plaintiffs claim that consumers choose Tom's products over other products based on the disputed "natural" labeling statements and contend that these statements allow Tom's to sell its products at a premium price.<sup>11</sup> According to the Complaint, Plaintiffs seek "a reimbursement of the premium Plaintiffs and the class members paid based on Defendants' misrepresentations."<sup>12</sup>

<sup>11</sup> Complaint, at ¶¶ 1, 3.

<sup>12</sup> Complaint, at ¶ 3.



14. In September 2019, the Court denied Plaintiffs’ motion to certify a nationwide class of consumers of Tom’s products.<sup>13</sup> In April 2021, the Court granted Plaintiffs’ motion for class certification for three classes:

- all persons who purchased Tom’s deodorant and/or toothpaste products on or after September 24, 2015 in the state of New York (“the New York Class”);
- all persons who purchased Tom’s deodorant and/or toothpaste products on or after September 24, 2015 in the state of California (“the California Class”); and
- all persons who purchased Tom’s deodorant and/or toothpaste products on or after September 24, 2015 in the state of Florida (“the Florida Class”).<sup>14</sup>

### III. OVERVIEW OF DENNIS REPORT

15. Dr. Dennis was retained by Plaintiff’s counsel “to measure whether the ‘natural’ claim on Tom’s toothpaste products (of various sizes, pack sizes, and flavors) and on Tom’s deodorant products cause any market price premium to be paid by Tom’s of Maine consumers and, if so, the amount of the price premium.”<sup>15</sup> In order to do so, Dr. Dennis ran two consumer Choice-Based Conjoint (“CBC”) studies: the first focused on toothpaste products and was conducted from

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<sup>13</sup> Opinion and Order, April 23, 2021, at p. 1.

<sup>14</sup> Opinion and Order, April 23, 2021, at pp. 6, 32-33.

<sup>15</sup> Dennis Report, at ¶ 18. Dr. Dennis previously submitted a report in this matter in June 2018 reporting the results of his toothpaste survey. The opinions and findings expressed in that report appear to be repeated in his most recent report filed in 2022. Dr. Dennis was deposed on the opinions presented in his 2018 report in August 2018 and submitted a reply declaration responding to certain criticisms of the toothpaste survey in November 2018. Declaration and Expert Report of J. Michael Dennis, Ph.D., June 15, 2018 (“Dennis 2018 Report”); Deposition of John Michael Dennis, Ph.D., August 21, 2018 (“Dennis 2018 Deposition”); Reply Declaration of J. Michael Dennis, Ph.D., November 21, 2018 (“Dennis 2018 Reply Report”).



June 4 through June 8, 2018, and the second focused on deodorant products and was conducted from June 28 through July 1, 2022.<sup>16</sup> For both surveys, Dr. Dennis worked with the research firm Dynata to program the questionnaires, provide the respondent samples, and administer the survey to respondents.<sup>17</sup> Dr. Dennis analyzed the results of these surveys to opine on the “price premium” associated with the challenged “natural” claims on Tom’s toothpaste and deodorant products. These price premiums were ultimately used by Plaintiffs’ damages expert, Mr. Weir, to opine on aggregate damages figures for each of the classes.<sup>18</sup>

#### **A. Survey Design**

16. Dr. Dennis describes the target population for his surveys as “non-institutionalized U.S. adults age 18 and over who had purchased Tom’s of Maine toothpaste (for the toothpaste conjoint survey) or deodorant (for the deodorant conjoint survey) for personal use in the past 12 months (before taking the survey).”<sup>19</sup> To qualify for Dr. Dennis’ surveys, respondents had to indicate in a series of screening questions that they lived in the U.S., were at least 18 years of age, had not taken a survey about relevant products (deodorant or oral care) in the past 30 days, and had purchased Tom’s toothpaste or deodorant in the past 12 months.<sup>20</sup> In both surveys, respondents also had to agree that they would complete the survey on their own without help from anyone else.<sup>21</sup> According to Dr. Dennis, he balanced the inbound sample of respondents to each survey to match U.S. census demographics.<sup>22</sup> After passing the screening questions, respondents proceeded to the conjoint exercise.

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<sup>16</sup> Dennis Report, at ¶¶ 20, 30, 64-65.

<sup>17</sup> Dennis Report, at ¶ 61.

<sup>18</sup> Weir Report, at ¶¶ 52, 61.

<sup>19</sup> Dennis Report, at ¶ 28.

<sup>20</sup> Dennis Report, at ¶ 29.

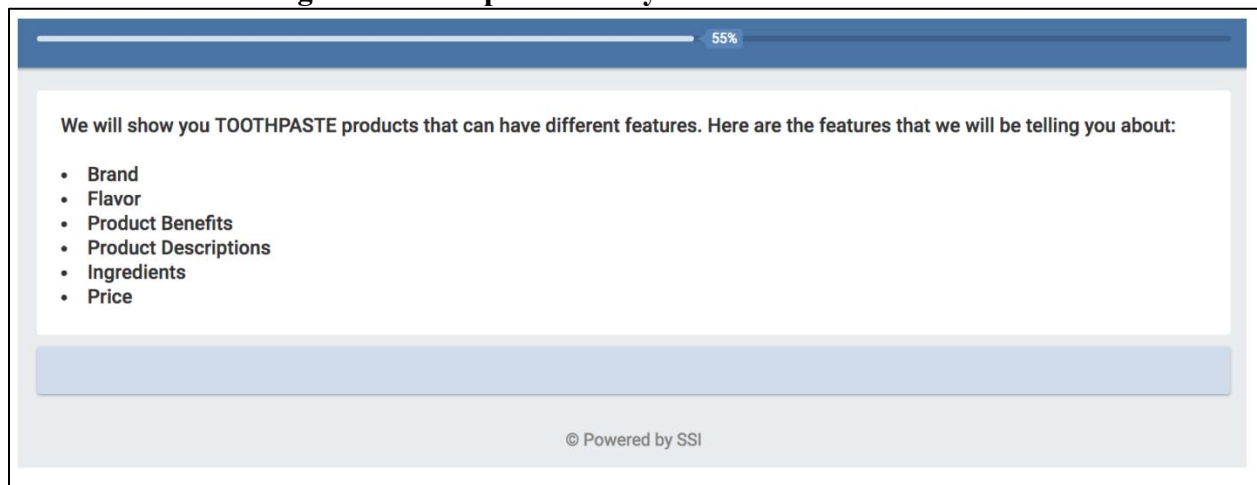
<sup>21</sup> Dennis Report, at Attachment C4, at p. 10 and Attachment D2, at p. 31.

<sup>22</sup> Dennis Report, at ¶¶ 59-60.

### 1. *Toothpaste Survey*

17. Respondents in Dr. Dennis' toothpaste survey were asked to "assume you are shopping at the store or website where you usually purchase TOOTHPASTE," to "assume that you are going to buy TOOTHPASTE for the purpose or purposes you usually buy it," to "select the product that you would purchase in real life where you usually purchase TOOTHPASTE," and to "[a]ssume that all the TOOTHPASTE products we show you are available to you for purchase."<sup>23</sup> Respondents were then introduced to the features that would appear in the choice tasks. As shown below in Figure 1, Dr. Dennis portrayed his survey as including six features.<sup>24</sup>

**Figure 1: Toothpaste Survey Feature Introductions<sup>25</sup>**



18. Respondents were then shown the different levels used to describe each feature (or "attribute"). Each feature was introduced on its own survey page, with the exception of the "Ingredients" feature, which was introduced across seven survey pages (one page introducing the feature followed by one page for each of the six ingredients lists).<sup>26</sup> The attributes and levels, as

<sup>23</sup> Dennis Report, at Attachment C4, at p. 12.

<sup>24</sup> As I discuss in more detail below, Dr. Dennis' analysis treats the "Product Descriptions" as independent attributes and thus his survey design includes many more attributes than he claims in his report.

<sup>25</sup> Dennis Report, at Attachment C4, at p. 13.

<sup>26</sup> Dennis Report, at Attachment C4, at pp. 15-26.

characterized by Dr. Dennis, are described below in Figure 2. As shown, the challenged “natural” claim was presented as if it were a level of the “Product Descriptions” attribute.

**Figure 2: Toothpaste Attributes and Levels<sup>27</sup>**

Attribute	Levels
Brand	Tom's of Maine Arm & Hammer Crest Colgate Sensodyne
Flavor	Clean Mint Fresh Mint Strawberry Peppermint Spearmint Fennel
Product Benefits	Cavity Protection Whole Care Sensitive Antiplaque & Whitening Deep Clean Advanced Whitening
Product Descriptions	Natural Fluoride-Free With Fluoride Clinically Proven Whitening Clinically Proven Whitening Technology Fresh Breath Fights Cavities Helps Prevent Tartar Build-Up Safe for Enamel No Artificial Dyes or Sweeteners Helps Prevent Stains Baking Soda
Price	
Ingredients	[See Dennis Report, p. 16]

<sup>27</sup> See Dennis Report, at ¶ 41.

19. Respondents were then shown the following instructions and asked to confirm their understanding:

- “Take your time and consider for purchase several TOOTHPASTE products that we show you
- Assume that you are going to buy the TOOTHPASTE product for the reason or purpose that you usually have when you purchase TOOTHPASTE
- Assume that all the TOOTHPASTE products we show you are available to you for purchase
- Select the TOOTHPASTE product that you would purchase in real life”<sup>28</sup>

20. After confirming, respondents then performed 10 choice exercises.<sup>29</sup> Each choice exercise consisted of three hypothetical toothpaste products described on the features and levels discussed above, including a random selection of two to five “Product Descriptions.”<sup>30</sup> Each choice exercise also included an option to choose “None of these.”<sup>31</sup> Figure 3 shows an example of the choice exercises respondents were asked to complete in Dr. Dennis’ toothpaste conjoint survey.

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<sup>28</sup> Dennis Report, at Attachment C4, at p. 27.

<sup>29</sup> Dennis Report, at Attachment C4.

<sup>30</sup> Dennis Report, at ¶ 33. Dr. Dennis claims that he balanced how often each claim is shown with each other claim. Dennis 2018 Reply Report, at ¶ 14. Dr. Dennis claims that he implemented prohibitions to prevent certain claims from appearing with other claims on the same product (e.g., “fluoride-free” and “with fluoride”). See Dennis Report, at Attachment C3.




<sup>31</sup> Dennis Report, at ¶ 33.

**Figure 3: Example Toothpaste Conjoint Choice Exercise<sup>32</sup>**

18%

If these were your only options, which of these TOOTHPASTES would you purchase in real life? (All the toothpaste products have the same amount of toothpaste, 5.5 ounces.)

(3 of 10)

Feature	Toothpaste A	Toothpaste B	Toothpaste C
Brand			
Flavor	Peppermint	Spearmint	Strawberry
Product Benefits	Advanced Whitening	Deep Clean	Advanced Whitening
Product Descriptions	<ul style="list-style-type: none"> <li>Natural</li> <li>Helps Prevent Stains</li> <li>Clinically Proven</li> <li>No Artificial Dyes or Sweeteners</li> </ul>	<ul style="list-style-type: none"> <li>No Artificial Dyes or Sweeteners</li> <li>Natural</li> <li>Fluoride-free</li> </ul>	<ul style="list-style-type: none"> <li>Fluoride-free</li> <li>Helps Prevent Stains</li> <li>Fresh Breath</li> </ul>
Ingredients	Click <a href="#">here</a> to see the ingredients	Click <a href="#">here</a> to see the ingredients	Click <a href="#">here</a> to see the ingredients
Price	\$5.00	\$4.00	\$6.00
Select one for purchase	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would buy none of these	<input type="radio"/>		

21. After completing these choice exercises, toothpaste respondents were asked two follow-up questions which confirmed that they purchased Tom's toothpaste for their personal use in the past 12 months and asked them to indicate where they bought Tom's toothpaste (e.g., drug stores/pharmacies, grocery stores, etc.).<sup>33</sup> Dr. Dennis excluded from his analysis any respondents who indicated that they had not purchased Tom's toothpaste in the past 12 months in response to these follow-up questions.<sup>34</sup>

<sup>32</sup> Dennis Report, at Attachment C4, at p. 31.

<sup>33</sup> Dennis Report, at Attachment C4, at pp. 41-42.

<sup>34</sup> See Dennis Report, at ¶¶ 58-59 and Attachment C7 (showing that filtering for "status" = "complete" and "qconfirm2" = "1" results in 1,000 respondents used in Dr. Dennis' analysis). See also, Dennis Report, at Attachment C8.

22. Prior to the launch of the toothpaste survey, Dr. Dennis conducted “one-on-one cognitive interviews with Tom’s of Maine consumers” in May 2018 purportedly “to determine whether respondents interpreted [his] survey questions in the manner that [he] intended, to identify areas for improving the clarity of [his] survey questions, and to assess whether any changes are warranted to [his] selection of attributes and levels for the conjoint surveys.”<sup>35</sup> During these interviews, participants were shown the “the actual conjoint survey questions on their computer screens and [were] asked for their feedback.”<sup>36</sup> This process “involved one-on-one dialogue between [Dr. Dennis] and real consumers during which [Dr. Dennis] showed them the actual survey questions and conjoint tasks on their computer screens and invited their feedback on the survey.”<sup>37</sup> According to Dr. Dennis, he implemented changes to his survey instrument following these interviews, including adding “Sensodyne” as a level to the “Brand” attribute, adding an instruction to respondents to assume that all of the products are the same 5.5 oz size, adding “Fennel” as a level of the “Flavor” attribute, and removing the [REDACTED] price point.<sup>38</sup> In addition, Dr. Dennis notes that he made certain other changes following these interviews but not as a consequence of them, including adding “Advanced Whitening” as a level of the “Product Benefits” attribute and adding a corresponding level to the “Ingredients” attribute.<sup>39</sup>

23. Following these updates to his survey, Dr. Dennis also conducted “pre-tests” with a “representative sample of members of the study target population” that implemented the same “sampling and data collection procedures” Dr. Dennis employed in the full fielding of his studies.<sup>40</sup>

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<sup>35</sup> Dennis Report, at ¶ 46. Dr. Dennis conducted 7 interviews of approximately 30 minutes duration on May 26, 2018 in support of his toothpaste survey. He conducted 8 interviews of approximately 30 minutes duration on June 27, 2022 in support of his deodorant survey.

<sup>36</sup> Dennis Report, at ¶¶ 47, 49.

<sup>37</sup> Dennis Report, at ¶ 49. Dr. Dennis’ report does not describe the screening criteria used to identify respondents for the cognitive interviews.

<sup>38</sup> Dennis Report, at ¶ 50.

<sup>39</sup> Dennis Report, at ¶ 51.

<sup>40</sup> Dennis Report, at ¶ 63.

He conducted these pre-tests “(i) for quality control and quality assurance testing of the survey instrument, (ii) to validate that the survey questionnaire was programmed correctly to [his] specifications, (iii) to identify any survey questions that were unclear to respondents, and (iv) to analyze the data to identify any problems, such as unexpected missing data.”<sup>41</sup> Dr. Dennis “pre-tested” 203 observations for his toothpaste survey on June 4, 2018 and, based on these results, “determined that the survey questionnaire was functioning appropriately and that the survey data were reliable.”<sup>42</sup>

## 2. *Deodorant Survey*

24. After passing the screening questions, respondents to Dr. Dennis’ deodorant survey were shown the following instructions.

**Figure 4: Deodorant Choice Task Instructions**<sup>43</sup>

This survey will ask you to consider for purchase several different stick DEODORANT products.

You will have 12 chances to make a choice about the product you would purchase or not purchase in real life.

For each of your choices, we will show you three different products to choose from.

Please assume each deodorant product will be:

- Sold in STICK form, not a spray;
- Sold in a 2.5 ounce size;
- Have the same fragrance/scent that you buy the most often.

Now let's tell you more about the products you will see in this survey.

25. Respondents were then introduced to the different attributes and levels that would be used in the choice exercises.<sup>44</sup> According to Dr. Dennis, each deodorant product shown in the

<sup>41</sup> Dennis Report, at ¶ 63.

<sup>42</sup> Dennis Report, at ¶ 64.

<sup>43</sup> Dennis Report, at Attachment D2, at p. 33.

<sup>44</sup> Dennis Report, at Attachment D2, at pp. 36-38.

choice tasks is described by three attributes,<sup>45</sup> each of which is associated with various levels summarized in Figure 5 below.

**Figure 5: Deodorant Product Attributes and Levels<sup>46</sup>**

Attribute	Levels
Brand	Tom's of Maine Arm & Hammer Schmidt's Old Spice Secret Dove
Label Claims on Front of Package	Natural Aluminum Free B Corp Certification Wide Stick Long Lasting 24H Protection 48H Protection No artificial fragrance Paraben free Non-irritating
Price	

26. Respondents then completed a series of 12 choice exercises in which they were asked to choose between three hypothetical deodorant products.<sup>47</sup> Each product profile included a random selection of two to four “Label Claims on Front of Package.”<sup>48</sup> Figure 6 shows an example of the choice exercises respondents were asked to complete in Dr. Dennis’ deodorant conjoint

<sup>45</sup> As I discuss in more detail below, Dr. Dennis’ analysis treats the “Label Claims on Front of Package” as independent attributes and thus his survey design includes many more attributes than he claims in his report.

<sup>46</sup> Dennis Report, at ¶ 42.

<sup>47</sup> Dennis Report, at ¶ 33 and Attachment D1.

<sup>48</sup> Dennis Report, at ¶ 33. Dr. Dennis claims that he implemented prohibitions to prevent certain claims from appearing with other claims on the same product (e.g., “24H Protection” and “48H Protection”). See Dennis Report, at Attachment D1.






survey. As shown below, in each choice exercise, respondents were first asked to choose between three hypothetical deodorant products and were then asked to indicate whether they would purchase the selected product in real life.<sup>49</sup>

**Figure 6: Exercise Deodorant Conjoint Choice Exercise<sup>50</sup>**

If these were your only options, which of these 2.5-ounce deodorant options would you purchase in real life?

4 / 12

	Product 1	Product 2	Product 3
<b>Brand</b>			
<b>Label Claims on Front of Product</b>	<ul style="list-style-type: none"> <li>• Long Lasting</li> <li>• 24H Protection</li> <li>• Paraben free</li> <li>• Non-Irritating</li> </ul>	<ul style="list-style-type: none"> <li>• Natural</li> <li>• Wide Stick</li> <li>• Paraben free</li> </ul>	<ul style="list-style-type: none"> <li>• B Corp Certification</li> <li>• No artificial fragrance</li> <li>• Paraben free</li> </ul>
<b>Price for 2.5 oz Product (not including tax)</b>	\$2.99	\$6.99	\$5.99
<b>Please select one for purchase</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Would you purchase this in real life?

☐ Yes

☐ No

27. After completing these exercises, respondents were asked a sequence of follow-up questions asking them to (1) confirm that they had purchased Tom's deodorant for their personal use in the past 12 months; (2) indicate where they had purchased Tom's deodorant in the past 12 months; (3) describe how often they had purchased Tom's deodorant in the past 12 months; and (4) indicate when they made their first purchase of Tom's deodorant (in the past 12 months, 1 to 5

<sup>49</sup> Dennis Report, at ¶ 33.

<sup>50</sup> Dennis Report, at Attachment D2, at p. 46.

years ago, or more than 5 years ago).<sup>51</sup> Dr. Dennis excluded from his analysis any respondents who indicated that they had not purchased Tom’s deodorant in the past 12 months in response to these follow-up questions.<sup>52</sup>

28. As with his toothpaste survey, Dr. Dennis conducted cognitive interviews and “pre-tests” for his deodorant survey. Dr. Dennis conducted eight cognitive interviews for his deodorant survey on June 27, 2022 in which he showed respondents his draft survey and asked for feedback on each question.<sup>53</sup> Dr. Dennis did not create any notes from his deodorant cognitive interviews (unlike with his toothpaste cognitive interviews) or any other documentation of the questions he asked or the responses provided by respondents.<sup>54</sup> According to Dr. Dennis, he did not make any changes to his deodorant survey as a result of his cognitive interviews.<sup>55</sup> Dr. Dennis also “pre-tested” 21 observations for the deodorant survey on June 28 and 29, 2022 and, based on these results, “determined that the survey questionnaire was functioning appropriately and that the survey data were reliable.”<sup>56</sup>

## **B. Survey Results and Analysis**

29. In total, 1,000 respondents completed Dr. Dennis’ toothpaste conjoint study in June 2018 and 849 completed his deodorant conjoint study in July 2022.<sup>57</sup> Following the administration

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<sup>51</sup> Dennis Report, at Attachment D2, at pp. 57-60.

<sup>52</sup> See Dennis Report, at Attachment D4 (showing that filtering for “status” = “3” (Qualified) and “TOM\_CONFIRM” = “1” results in 849 respondents used in Dr. Dennis’ analysis). See also, Dennis Report, at Attachment D5.

<sup>53</sup> Dennis Report, at ¶¶ 46, 49.

<sup>54</sup> I understand that Dr. Dennis produced all documentation he has with regard to the cognitive interviews. See Dennis Report, at pp. 32-33. Not having this material precludes me from evaluating whether the questions were asked in an unbiased, clear manner and whether respondents’ responses support Dr. Dennis’ conclusions that the survey “provided [respondents] the information they needed to make purchase decisions.” Dennis Report, at ¶ 54.

<sup>55</sup> Dennis Report, at ¶ 56.

<sup>56</sup> Dennis Report, at ¶ 65.

<sup>57</sup> Dennis Report, at ¶ 58.

of the survey, Dr. Dennis used Sawtooth Software to analyze his data.<sup>58</sup> Developed in 1983, Sawtooth is a software program that automates the analysis of conjoint data and allows researchers to run choice simulations to estimate how consumers would choose between a fixed set of options offered to them (*i.e.*, within a certain competitive scenario).<sup>59</sup> As described by Bryan Orme, the CEO of Sawtooth Software, conjoint simulators can provide “directional indicators...about relative feature importances and preferences for product configurations,” but do not (on their own) account for “other factors, such as awareness, distribution, advertising, and product life cycles” that drive market outcomes in the real world.<sup>60</sup>

30. Dr. Dennis uses Sawtooth to estimate the amount of utility that each individual respondent places on each attribute level (*e.g.*, each brand for the brand attribute, or each price level for the price attribute) tested in the surveys. These individual utility estimates are often referred to as “partworths.” Dr. Dennis’ analysis uses Hierarchical Bayes estimation, a statistical technique that estimates partworths for each individual respondent using data from that respondent’s specific choices while also borrowing data about the overall sample of respondents.<sup>61</sup>

31. Using these partworth utilities, Dr. Dennis conducted what he describes as a “market simulation” to calculate an alleged “price premium” associated with the “natural” claim.<sup>62</sup> Dr. Dennis’ market simulation compares two hypothetical products, one with the at-issue “natural”

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<sup>58</sup> Dr. Dennis used two different versions of Sawtooth to estimate utilities and conduct market simulations for his surveys. According to his report, Dr. Dennis used Sawtooth Lighthouse Version 9.5.3 to estimate partworth utilities for the toothpaste survey and Sawtooth Lighthouse Version 9.14 to estimate partworth utilities for his deodorant survey. Dennis Report, at ¶ 68.

<sup>59</sup> Orme, B.K., *Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research*, Fourth Edition, Research Publishers LLC, 2020 (“Orme (2020)”), at pp. 11, 229.

<sup>60</sup> Orme (2020), at pp. 26-27.

<sup>61</sup> See Orme (2020), at p. 44.

<sup>62</sup> I use Dr. Dennis’ terms “price premium” and “market simulation” to simplify discussion throughout this report, but do not agree with Dr. Dennis’ interpretation of his results as a “price premium” or that his simulation can estimate market equilibrium outcomes.

claim and the other without, and calculates the hypothetical price of the product without the at-issue claim that results in an equal share of respondents choosing each product.<sup>63</sup> Dr. Dennis interprets the difference in price between the two products as what he refers to as the alleged “price premium” associated with the “natural” claim.<sup>64</sup> Specifically, for toothpaste products, Dr. Dennis uses a market simulator tool created by Dynata, the research firm he employed to administer his surveys, to simulate a market with three options: Option 1 (a hypothetical Tom’s toothpaste product with the “natural” claim), Option 2 (an otherwise identical Tom’s toothpaste product without the “natural” claim), and Option 3 (“None of These”).<sup>65</sup> For deodorant products, Dr. Dennis uses Sawtooth’s market simulation function to simulate a market with two options—Option 1 (a hypothetical Tom’s deodorant product with the “natural” claim) and Option 2 (an otherwise identical Tom’s deodorant product without the “natural” claim).<sup>66</sup> Dr. Dennis does not include an option for “None of These” in his deodorant simulation.<sup>67</sup>

32. Dr. Dennis claims that his analysis “calculate[s] the price premium attributable to the challenged label for the marginal consumer, that is, the additional price that the marginal consumer would pay for the product with the ‘natural’ claim.”<sup>68</sup> Dr. Dennis claims this “market simulation provides a statistically robust estimate of the price premium that purchasers paid as a

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<sup>63</sup> Dennis Report, at ¶¶ 69-72.

<sup>64</sup> See Dennis Report, at ¶ 69.

<sup>65</sup> More specifically, Option 1 consists of the following features: Price: [REDACTED]; Brand: Tom’s of Maine; Flavor: Peppermint; Product Benefits: Antiplaque & Whitening; Product Descriptions: Fluoride-Free, Whitening, Fresh Breath, Helps Prevent Tartar Build-up, No Artificial Dyes or Sweetener, Natural. Option 2 is identical to Option 1 but does not include the Natural claim. Dennis Report, at ¶¶ 68, 72.

<sup>66</sup> Dennis Report, at ¶¶ 68, 72.

<sup>67</sup> See Dennis Report, at Attachment D9, at sheet “Results Summary” (showing that the simulation included two hypothetical products) and sheet “Simulation Settings” (showing that the “None Option” was “Not included”).

<sup>68</sup> Dennis Report, at ¶ 70.

result of the challenged ‘natural’ claim as a fraction of the total price paid by consumers for the Tom’s of Maine toothpaste and deodorant products.”<sup>69</sup>

33. Dr. Dennis imposes certain assumptions to arrive at what he describes as a “conservative” estimation of the alleged price premium associated with the “natural” claim on Tom’s deodorants and toothpastes.<sup>70</sup> In particular, Dr. Dennis selects “the lowest percentage price premium that is returned by the simulation, which also corresponds to the most expensive price point in the toothpaste market simulation (██████) and deodorant market simulation (██████).” Dr. Dennis claims that “[b]ecause consumers as economic actors are sensitive to the price (with lower valuations for the product as the price increases), using the highest price points available for the market simulation produces conservative, minimal estimates of the price premiums.”<sup>71</sup> At these price points, Dr. Dennis calculates the alleged price premium associated with the “natural” claim to be ██████ percent for toothpaste products (or ██████ of the product price of ██████) and ██████ percent for deodorant (or ██████ of the product price of ██████).<sup>72</sup> Dr. Dennis concludes that these calculated price premiums are “solely attributable to Defendants’ ‘natural’ claim.”<sup>73</sup>

34. These alleged price premiums are then utilized by Mr. Weir to compute purported class wide price premium damages.<sup>74</sup> Mr. Weir calculates damages by multiplying Dr. Dennis’ price premium estimates (██████ percent for toothpaste products and ██████ percent for deodorant products) by the dollar sales of the at-issue Tom’s toothpaste and deodorant products sold during

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<sup>69</sup> Dennis Report, at ¶ 69.

<sup>70</sup> Dennis Report, at ¶¶ 71-72.

<sup>71</sup> Dennis Report, at ¶ 71.

<sup>72</sup> Dennis Report, at ¶¶ 74-76. Dr. Dennis offers no explanation as to why the purported price premium for the “natural” claim varies between toothpaste and deodorant products.

<sup>73</sup> Dennis Report, at ¶¶ 75-76.

<sup>74</sup> Mr. Weir was retained to “to ascertain whether it would be possible to determine damages on a class-wide basis using common evidence, and if so, to provide a framework for the calculation of, and a preliminary estimate of, damages suffered by the proposed class of consumers as a result of the allegedly false and misleading Claim.” Weir Report, at ¶ 5.

the class period in California, Florida, and New York.<sup>75</sup> Based on this approach, Mr. Weir calculates total price premium damages of approximately [REDACTED] for Tom's toothpaste products (consisting of [REDACTED] for the California class, [REDACTED] for the Florida class, and [REDACTED] for the New York class) and approximately [REDACTED] for Tom's deodorant products (consisting of [REDACTED] for the California class, [REDACTED] for the Florida class, and [REDACTED] for the New York class).<sup>76</sup>

#### IV. RESPONSE TO THE DENNIS REPORT

##### A. Conjoint Analysis Is Not the Appropriate Tool to Measure a Price Premium, If Any, Associated with the Challenged Claim Because Actual Sales Data Are Available

35. Conjoint analysis is a survey technique based on the assumption that choice alternatives can be described as profiles of multiple attributes, and consumers consider these attributes when making a choice among the choice alternatives. Conjoint methodology then decomposes a consumer's overall preference about the set of choice alternatives into separate utility values for each attribute. When designed and used appropriately, conjoint analysis can provide valid and reliable measures of consumers' relative preferences and choices. A large body of literature has developed around guidelines and best practices on how to design and administer conjoint analysis so that it yields valid and reliable results.<sup>77</sup>

36. Conjoint analysis is designed to estimate consumer preferences for situations in which marketplace data are not available. However, when market data relevant to the issue at hand

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<sup>75</sup> Weir Report, at ¶ 59. Mr. Weir claims that this calculation "can be performed on a class-wide basis, Nationwide or across different geographies, and for any defined time period, including the proposed Class Period(s) in this litigation." Weir Report, at ¶ 60.

<sup>76</sup> Weir Report, at ¶ 61.

<sup>77</sup> See, e.g., Orme (2020).

*do* exist, it is important to consider and analyze this data over any data derived from a hypothetical choice set generated by a consumer survey. As conjoint expert Professor Joel Huber described in a Sawtooth research paper (the conjoint survey software used by Dr. Dennis) titled “What We Have Learned from 20 Years of Conjoint Research,” “if a company needs to know what customers do now, that is best approximated through econometric analysis of current sales data.”<sup>78</sup> Additionally, a Sawtooth reference guide notes the importance of “careful validation based on real sales data” in analyzing the results of conjoint analyses.<sup>79</sup>

37. In this case, I understand that there are relevant market data available that can be analyzed to isolate the impact of the challenged claim on marketplace transactions. I understand that Tom’s made certain changes pertaining to the “natural” label on its toothpaste and deodorant products over time. Specifically, in 2014, I understand that Tom’s added language to the packaging for all toothpastes and deodorants inviting consumers to visit the Tom’s website to “[l]earn more about our Stewardship Model and what ‘natural’ means for Tom’s of Maine ingredients and their processing.”<sup>80</sup> This language was included on Tom’s toothpastes and deodorants shipped to retailers by the end of 2015 and sold to consumers by early 2016.<sup>81</sup> In addition, around June 2020, Tom’s revised the packaging on certain deodorant products to remove the word “natural” to free up additional space on the label and harmonize packaging across labels that had been translated into other languages.<sup>82</sup> Thus, there exists data with and without the “natural” claim on the label. Further, around 2020-2021, Tom’s made substantial changes to the design of its packaging as part

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<sup>78</sup> Huber, J., “What We Have Learned from 20 Years of Conjoint Research: When to Use Self-Explicated, Graded Pairs, Full Profiles or Choice Experiments,” *Sawtooth Software Research Paper Series*, 1997, pp. 1-16, at p. 2.

<sup>79</sup> Orme (2020), at pp. 26-27.

<sup>80</sup> Declaration of John Kindness in Support of Expert Report of Edward J. Fox, August 22, 2022 (“Kindness Declaration”), at ¶ 4.

<sup>81</sup> Kindness Declaration, at ¶ 7.

<sup>82</sup> Kindness Declaration, at ¶ 8.

of an overall brand refresh campaign.<sup>83</sup> Among other changes, this packaging refresh removed the word “natural” from the front packaging of all products in Tom’s Long-Lasting deodorant line.<sup>84</sup> An example of the revised packaging for Tom’s Long-Lasting deodorant is shown below.<sup>85</sup>



38. With appropriate modeling and controls, data on marketplace transactions before and after these changes can be used to estimate the impact of the challenged claim based on marketplace reactions. As such, the availability of marketplace data renders Dr. Dennis’ conjoint analyses unnecessary. Survey data are often used when actual marketplace sales are not available. Why ask people what they *think they might do* in a *hypothetical situation*, when we have data on the actual response from consumers when the situation did occur?

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<sup>83</sup> Kindness Declaration, at ¶ 9.

<sup>84</sup> Kindness Declaration, at ¶ 9.

<sup>85</sup> <https://www.target.com/p/tom-s-of-maine-long-lasting-natural-deodorant-stick-lavender-2-25oz/-/A-86309198?preselect=11204565#lnk=sametab> (viewed 8/22/2022).



39. I understand that another expert, Dr. Edward J. Fox, has examined wholesale pricing data for Tom’s deodorant and toothpaste products from 2011 to 2021 as well as retail pricing data for Tom’s deodorant and toothpaste products sold in Florida over the period from 2014 to 2021 and Long-Lasting deodorant products sold in the US market at large from 2017 to 2021.<sup>86</sup> Dr. Fox finds no evidence suggesting that wholesale prices or retail prices for Tom’s toothpastes and deodorants changed following the packaging changes in early 2016.<sup>87</sup> Additionally, Dr. Fox finds no evidence suggesting that wholesale prices or retail prices for Tom’s Long-Lasting deodorants changed after Tom’s removed the “natural” claim from the front of the label in 2021.<sup>88</sup>

**B. Dr. Dennis’ Conjoint Survey Design Cannot be Relied Upon to Provide Accurate Measures of Consumer Preferences for the Challenged “Natural” Claim**

***1. Dr. Dennis’ survey design inflates the importance of the challenged “natural” claim by focusing respondents on the claim and omitting other attributes that might play a role in the choice process***

40. Conjoint analysis relies on participants choosing their preferred products and making the same kind of trade-offs they would in the real world.<sup>89</sup> However, when choice exercises and hypothetical products are not correctly designed and presented, respondents’ choices in the conjoint survey may not reflect their real-world preferences and choices. Researchers have long recognized the importance of attribute selection in designing a conjoint survey. For example, practitioner Bryan Orme, CEO of Sawtooth Software (and whom Dr. Dennis cites multiple times

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<sup>86</sup> Expert Report of Edward J. Fox, August 23, 2022 (“Fox Report”), at Section IV.

<sup>87</sup> Fox Report, at Section IV.

<sup>88</sup> Fox Report, at Section IV.

<sup>89</sup> Orme (2020), at p. 20.

in his report<sup>90</sup>), remarks that “[d]efining proper attributes and levels is arguably the most fundamental and critical aspect of designing a good conjoint study.”<sup>91</sup> In the book *Applied Conjoint Analysis*, Professor Vithala Rao emphasizes that “selection of attributes and levels is a very crucial step in the design of conjoint studies.”<sup>92</sup> My co-authors and I similarly describe the failure to include important features in a study as an example of the “greatest potential error” in designing a conjoint.<sup>93</sup> Other prominent scholars similarly caution that, “even though we may wish to test only a small number of patented features, we must include many of the other important features in the product,” because when important attributes are omitted, the survey “invite[s] the respondents to make attributions that are not correct.”<sup>94,95</sup>

41. In his conjoint studies, Dr. Dennis describes hypothetical toothpaste products along six dimensions (brand, price, flavor, product benefits, product descriptions, ingredients, and price) and hypothetical deodorant products along three dimensions (brand, label claims on front of package, and price). However, my research suggests that a number of other attributes may influence consumer decisions for toothpaste products. In particular, my review suggests that attributes such as American Dental Association (“ADA”) approval and packaging may be important factors for consumers in choosing which toothpaste to purchase. For example, several toothpaste buying guides advise consumers to seek out toothpastes that have earned approval from

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<sup>90</sup> See, e.g., Dennis Report, ¶¶ 24, 30, 58, 66, 68.

<sup>91</sup> Orme (2020), at p. 49.

<sup>92</sup> Rao, V., *Applied Conjoint Analysis*, Springer, 2013, at pp. 43-44.

<sup>93</sup> Bendle, N.T., P.W. Farris, P.E. Pfeifer, and D.J. Reibstein, *Marketing Metrics*, Second Edition, Pearson Education, 2010, at p. 151.

<sup>94</sup> Allenby, G., J. Brazell, J. Howell, and P. Rossi, “Valuation of Patented Product Features,” *Journal of Law and Economics*, Vol. 57, No. 3, 2014, pp. 629-663, at p. 642. The authors state: “There are cases in which conjoint designs have been used that test only patented product features and do not include other important product features. Not only does this invite the respondents to make attributions that are not correct, but it also calls attention to the patented features. This practice can lead to an overstatement of feature value.”

<sup>95</sup> In his previous deposition in this matter, Dr. Dennis agreed that “[y]ou need to have the main drivers of choice” in a conjoint survey. Dennis 2018 Deposition, at p. 116.

the ADA, emphasizing that “[w]hatever your toothpaste needs, be sure to choose toothpaste that has earned an [ADA] seal of approval.”<sup>96</sup> Other articles note that toothpaste packaging can have a significant impact on the ease of using the product, advising consumers that “[f]or something you use so often, packaging really matters” as it can affect “how easy it [is] to unscrew the top (without losing the cap) and if the tube can sit upright on the counter which takes up less space.”<sup>97</sup> In addition, Dr. Dennis’ cognitive interview notes suggest that respondents identified other attributes that were important to their toothpaste purchase decisions, including “no animal testing” and “made in the USA.”<sup>98</sup> These attributes were not included in Dr. Dennis’ final toothpaste survey.

42. Similarly, for deodorants, my research suggests that attributes such as fragrance/scent and format (*e.g.*, stick) may be important to consumers purchasing deodorants.<sup>99</sup> Reviews discussing “best deodorants” often discuss and compare products based on their scent<sup>100</sup> and certain deodorant brands, such as Old Spice, are marketed heavily based on their scent.<sup>101</sup> Tom’s market research suggests that Tom’s consumers rank fragrance highly in their purchase decision-making process.<sup>102</sup> Other sources discuss notable differences between deodorant formats,

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<sup>96</sup> <https://www.webmd.com/oral-health/guide/weighing-your-toothpaste-options> (viewed 8/8/2022). *See also*, <https://www.deltadental.com/us/en/protect-my-smile/oral-health-habits/brushing-your-teeth/choosing-the-right-toothpaste.html> (viewed 8/8/2022); <https://www.nbcnews.com/select/shopping/best-toothpastes-ncna1294664> (viewed 8/8/2022). Several Tom’s toothpaste products have earned the ADA seal of approval. *See* <https://www.tomsofmaine.com/products/product-certification> (viewed 8/17/2022).

<sup>97</sup> <https://www.insider.com/guides/health/best-toothpaste> (viewed 8/8/2022).

<sup>98</sup> Dennis Report, at Attachment C5. According to Dr. Dennis’ cognitive interview notes, one respondent explicitly indicated that they made their own assumptions about these attributes when taking the survey.

<sup>99</sup> *See, e.g.*, COLGATETOMS00162929, at slide 7, 18.

<sup>100</sup> *See* <https://www.cnet.com/health/personal-care/best-deodorants/> (viewed 8/9/2022) (describing scents available for each selected deodorant and discussing the reviewer’s favorite scent for each). *See also*, <https://www.cnn.com/cnn-underscored/beauty/best-deodorant> (viewed 8/9/2022); <https://www.goodhousekeeping.com/beauty-products/g26974590/best-deodorants-for-women/> (viewed 8/9/2022).

<sup>101</sup> Old Spice’s 2010 “Smell like a man, man” campaign revitalized the brand and lead to doubling brand sales in less than a year. *See* <https://smithbrothersmedia.com.au/get-smarter/case-study-old-spice-smell-like-a-man-man/> (viewed 8/16/2022).

<sup>102</sup> COLGATETOMS00005158, at slide 24. I understand that Plaintiffs do not dispute that Tom’s fragrances are natural.

including stick and roll-on formats, that impact how the deodorant feels upon application and the potential to leave marks or stains on the consumer's clothes.<sup>103</sup> Dr. Dennis appears to recognize the importance of deodorant format and fragrance/scent, as he specifically refers to these features in his deodorant survey. However, rather than including them as attributes in his choice tasks, Dr. Dennis instructed respondents to assume that each deodorant product is "sold in a STICK form, not a spray" and has "the same fragrance/scent that you buy the most often."<sup>104</sup> By instructing respondents to hold these features constant across hypothetical products, Dr. Dennis omits the importance of these features to the consumers in the real world, thereby causing the importance of the attributes he does include in his study to be overstated. Further, academic research has noted that respondents struggle with the "hold constant" instruction, especially when important attributes are left out of a conjoint survey.<sup>105</sup> Here, for example, respondents who purchase distinctively scented Old Spice products may struggle to assume that hypothetical deodorant products associated with other brands, such as Dove,<sup>106</sup> have "the same fragrance/scent that [they] buy most often."<sup>107</sup> This same argument holds for other omitted attributes such as size.

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<sup>103</sup> In particular, roll-on deodorants are typically liquid or gel based, leaving a wet sensation on the arm upon application before drying. If the deodorant does not fully dry before it comes into contact with a consumer's clothing, it may leave a stain. Stick deodorants, on the other hand, might be solid or gel-based. Solid deodorants are dry upon application but may leave white marks on the consumer's clothes. <https://pediaa.com/what-is-the-difference-between-roll-on-and-stick-deodorant/> (viewed 8/16/2022).

<sup>104</sup> Dennis Report, at Attachment D1, at p. 10.

<sup>105</sup> Allenby, G., J. Brazell, J. Howell, and P. Rossi, "Valuation of Patented Product Features," *Journal of Law and Economics*, Vol. 57, No. 3, 2014, pp. 629-663, at p. 642.

<sup>106</sup> For example, Old Spice deodorants are offered in scents such as "NightPanther" (which is described as a "long-lasting sandalwood and chocolate scent") and "Krakengard" (which is described as smelling like "citrus, fresh herbs, and the unspeakable power of the ancient ocean"). Dove deodorants for men are offered in scents such as "Juniper Woods" (a "woody juniper scent") and "Extra Fresh" (an "invigorating, refreshing scent"). See <https://oldspice.com/nightpanther-deodorant/> (viewed 8/9/2022); <https://oldspice.com/krakengard-deodorant/> (viewed 8/9/2022); <https://www.dove.com/us/en/men-care/deodorant/stick-antiperspirant/men-care-ultimate-smooth-solid-antiperspirant-juniper-woods.html> (viewed 8/9/2022); <https://www.dove.com/us/en/men-care/deodorant/stick/men-care-extra-fresh-deodorant-stick.html> (viewed 8/9/2022).

<sup>107</sup> While Dr. Dennis claims that "[r]espondents in my cognitive interviews for the deodorant conjoint survey also confirmed that they successfully made their choices by assuming the products had the same fragrance/scent of the deodorant they buy the most often," he has not provided any documentation of the questions asked during

43. In addition, researchers have noted the importance of the overall product packaging on consumer decision-making. For example, according to *Marketing Management*, “A good package draws the consumer in and encourages product choice...the effective package must perform many sales tasks: attract attention, describe the product’s features, create consumer confidence, and make a favorable overall impression.”<sup>108</sup> Here, the product packaging for the Tom’s products at issue includes several key pieces of information that may be relevant to consumer purchase decisions, including additional information about the term “natural” (as discussed in more detail below). In addition, while Dr. Dennis’ surveys present all product attributes with equal prominence, the Tom’s product packaging emphasizes some features over others. For example, as shown below, the packaging for Tom’s Enamel Strength Toothpaste emphasizes the “Enamel Strength” benefit with capital letters, a larger font size, and a blue background. The descriptions “with fluoride” and “peppermint” are also presented in larger font than the “natural” claim, potentially signaling their relative importance to consumers. Similarly, the packaging for Tom’s Original Care deodorant features the “Original Care” and “no artificial fragrance or preservatives” labels more prominently than the “natural” claim.

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his deodorant cognitive interviews or the responses given by respondents. Not having this material precludes me from evaluating whether or not the questions were asked in an unbiased, clear manner and whether respondents’ responses support Dr. Dennis’ conclusion. Dennis Report, at ¶ 54.

<sup>108</sup> Kotler, P., and K.L. Keller, *Marketing Management*, 15th Edition, Pearson, 2016, at p. 412.



44. Further, as discussed above, Tom’s changed its product packaging substantially in 2021 as part of “the biggest visual overhaul in the brand’s history.”<sup>109</sup> The revised packaging “graphically illustrat[es] [Tom’s] commitment to a better future” and presents “a mosaic of button-sized icons reminding people that even the smallest action can lead to big change.”<sup>110</sup> An example of Tom’s new product packaging is shown below. As noted above, these changes resulted in the removal of the “natural” claim from Tom’s Long-Lasting line of deodorants. These changes are not captured in Dr. Dennis’ conjoint survey.<sup>111</sup>

<sup>109</sup> <https://www.prnewswire.com/news-releases/new-toms-of-maine-packaging-fuses-retro-look-with-modern-day-activism-301292642.html> (viewed 8/23/2022).

<sup>110</sup> <https://www.prnewswire.com/news-releases/new-toms-of-maine-packaging-fuses-retro-look-with-modern-day-activism-301292642.html> (viewed 8/23/2022).

<sup>111</sup> <https://www.target.com/p/tom-s-of-maine-long-lasting-natural-deodorant-stick-lavender-2-25oz/-/A-86309198?preselect=11204565#lnk=sametab> (viewed 8/22/2022).



45. In sum, Dr. Dennis’ omission of important attributes driving purchasing decisions inflates the value of the attributes that are included, including the at-issue “natural” claim, by focusing respondents’ attention on these features. This is known as “focalism bias”—a bias whereby people tend to artificially magnify the importance of a single element of an experience or product to which their attention is drawn.<sup>112</sup> Academic research has shown that, in part due to focalism bias, “[o]mitting major features in order to estimate the willingness to pay for minor features biases the valuation of those included minor features upwards,” often by several multiples.<sup>113</sup> This suggests that, here, Dr. Dennis likely would have obtained different (lower) willingness to pay estimates for the challenged “natural” claim if he had included major features

<sup>112</sup> Research on focalism bias was pioneered by Nobel prize-winner Daniel Kahneman. *See, e.g.*, Schkade, D.A. and D. Kahneman, “Does Living in California Make People Happy? A Focusing Illusion in Judgments of Life Satisfaction,” *Psychological Science*, Vol. 9, No. 5, 1998, pp. 340-346.

<sup>113</sup> Bedi, S., and D. Reibstein. “Damaged Damages: Errors in Patent and False Advertising Litigation,” *Alabama Law Review*, 73(2), 2021, pp. 385-436, at pp. 390, 400, 404.



such as ADA approval (for toothpastes) and scent (for deodorants).<sup>114</sup> These inflated results feed directly into Dr. Dennis' market simulation analysis, resulting in price premium estimates that overstate the true market value of the challenged "natural" claim. As such, the purported price premiums Dr. Dennis calculates using his conjoint results cannot be relied upon to estimate alleged harm for the classes.<sup>115,116</sup>

**2. *Dr. Dennis' survey design includes more features than respondents can reasonably be expected to process, resulting in choice tasks that are cognitively burdensome and likely to produce invalid results***

46. In his report, Dr. Dennis claims that his surveys were "relatively simple and cognitively easy for respondents [to understand and complete] compared to standard market research conjoint surveys."<sup>117</sup> One of the reasons Dr. Dennis provides in support of this opinion is that the hypothetical toothpaste products in his toothpaste study were described using "only six [attributes]: brand, flavor, product benefits, product descriptions, ingredients, and price" and the hypothetical deodorant products in his deodorant study were described using "only three

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<sup>114</sup> Dr. Dennis acknowledged in deposition that changing the attributes and/or levels in a conjoint study could change the results. *See* Dennis Deposition, at p. 176.

<sup>115</sup> Dr. Dennis' toothpaste study potentially also calls attention to the "natural" attribute through inconsistent capitalization on the information page introducing the "Product Descriptions" feature. On this information page, most of the "Product Descriptions" are shown in lowercase. Only three descriptions are presented with the first letter of each word capitalized—"Natural," "Safe for Enamel," and "Helps Prevent Stains." This may draw respondents' attention to these descriptions (including the "natural" claim) over other descriptions. *See* Dennis Report, at Attachment C4, at p. 25.

<sup>116</sup> In addition, Dr. Dennis' survey does not require respondents to take action based on their choices in the survey (e.g., requiring them to purchase a product with features their survey responses suggest that they value the most) or include any other "incentive alignment" mechanisms that would further encourage respondents to make choices consistent with their true preferences. Research suggests that incentive alignment mechanisms encourage respondents to make choices that directly align with their real-world actions and decisions and may result in greater respondent involvement and higher quality data. When these mechanisms are not employed, respondents may be less likely to make selections in the survey that are consistent with their choices in reality. *See, e.g.,* Ding, M., R. Grewal, and J. Liechty, "Incentive-Aligned Conjoint Analysis," *Journal of Marketing Research*, Vol. 42, No. 1 (February 2005), pp. 67-82; Ding, M., "An Incentive-Aligned Mechanism for Conjoint Analysis," *Journal of Marketing Research*, Vol. 44, No. 2 (May 2007), pp. 214-223.

<sup>117</sup> Dennis Report, at ¶ 33.



[attributes]: brand, label claims on the front of the package, and price.”<sup>118</sup> However, as I explain below, Dr. Dennis’ survey design and analysis treats each individual product description or label claim as independent attributes, resulting in considerably more attributes than Dr. Dennis claims and likely imposing a high cognitive burden on respondents completing the survey. This is what Dr. Dennis claimed he was trying to avoid,<sup>119</sup> yet he failed to do so.

47. In a typical conjoint exercise, respondents are presented with a small number of hypothetical products. These products are described to respondents on several dimensions or attributes. For example, a hypothetical smartphone can be described using brand, screen size, battery life, storage, number of cameras, and price attributes. The exercise is designed such that each product attribute takes one of several values, called levels. Attribute levels must be mutually exclusive within each attribute, such that a product concept is defined using only one level of each attribute.<sup>120</sup> By systematically varying the attribute (or feature) levels in presented product profiles and observing how survey participants respond to the changes, one can determine which attribute levels are preferred and the relative importance of a given product feature on consumers’ choice.<sup>121</sup> Conjoint analysis requires respondents to tradeoff different aspects of a given product, weighing product alternatives that have both more desirable and less desirable feature levels, and uses choice data to deduce the relative worth of one level of a feature to another level of a feature.<sup>122</sup> Thus, the more attributes that are included in the conjoint choice tasks, the harder it is for respondents to compare hypothetical product profiles (*i.e.*, to tradeoff between different feature levels across products), which may lead to respondent burnout and poor data.

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<sup>118</sup> Dennis Report, at ¶ 33.

<sup>119</sup> Dennis Report, at ¶ 33 (noting that “[s]urveys with a large number of attributes can be cognitively challenging for respondents in comparing product profiles and making choices.”).

<sup>120</sup> Orme (2020), at pp. 51, 201.

<sup>121</sup> Orme (2020), at pp. 2-3.

<sup>122</sup> Orme (2020), at p. 3.

48. Dr. Dennis claims to have included only six attributes in his toothpaste study and three attributes in his deodorant study. However, while Dr. Dennis describes the “Product Descriptions” attribute in the toothpaste study as a single attribute consisting of multiple levels for each of the different claims (including the challenged “natural” claim), in reality these claims are treated as 10 separate *attributes* in Dr. Dennis’ conjoint design and analysis. Similarly, each of the 10 different label claims included in the “Label Claims on Front of Package” attribute in Dr. Dennis’ deodorant study is treated as a separate attribute in his survey design and analysis.<sup>123</sup> As noted above, attribute levels must be mutually exclusive within a given attribute. Here, the individual product claims are not mutually exclusive—for example, it is possible for a toothpaste product to be both “natural” and “fluoride-free”—and Dr. Dennis’ survey uses multiple claims to describe each product concept. Thus, though he did not describe it as such, Dr. Dennis’ analysis treats each product claim as its own attribute, typically with two mutually exclusive levels for “present” and “absent.” These additional attributes and their associated levels are summarized in Figures 7 and 8 below. As such, Dr. Dennis’ toothpaste study includes a total of 14 different attributes (10 product description attributes plus brand, flavor, product benefits, and price)<sup>124</sup> and his deodorant study includes a total of 12 different attributes (10 label claims attributes plus brand and price)<sup>125</sup>—far more than what his report claims is typical, and potentially problematic given

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<sup>123</sup> Dr. Dennis’ deodorant survey questionnaire explicitly notes that “Sawtooth will treat each of the Label Claims as separate attributes.” See Dennis Report, at Attachment D1, at p. 16.

<sup>124</sup> Dr. Dennis’ analysis excludes the “Ingredients” attribute, for a total of 14 attributes. See Dennis Report, at ¶ 41 (“The ingredients attribute does not result in utility data used for the conjoint analysis since the ingredients level shown to the respondents was not randomized but instead tied to the level of the brand in each product profile.”). However, the “Ingredients” attribute was presented to respondents as if it were a separate attribute, and thus may have added to the complexity of the choice task.

<sup>125</sup> Dr. Dennis’ Sawtooth design files confirm these attribute counts. See *Toothpaste\_Attributes\_and\_Levels(1).txt* (showing 14 attributes in Dr. Dennis’ toothpaste conjoint design); *Deo\_CBC\_Attributes\_and\_Levels.txt* (showing 12 attributes in Dr. Dennis’ deodorant conjoint design).

that he acknowledges such a large number of attributes could be cognitively challenging for respondents.<sup>126</sup>

**Figure 7: Toothpaste Study—Additional Attributes Included by Dr. Dennis<sup>127</sup>**

<b>Attribute</b>	<b>Levels</b>
Natural	[Absent] Natural
Fluoride	[Absent] Fluoride-free With Fluoride
Clinically proven / whitening	[Absent] Clinically Proven Whitening Clinically Proven Whitening Technology Clinically proven / Whitening
Fresh Breath	[Absent] Fresh Breath
Fights Cavities	[Absent] Fights Cavities
Helps Prevent Tartar Buildup	[Absent] Helps Prevent Tartar Buildup
Safe for Enamel	[Absent] Safe for Enamel
No Artificial Dyes or Sweeteners	[Absent] No Artificial Dyes or Sweeteners
Helps Prevent Stains	[Absent] Helps Prevent Stains
Baking Soda	[Absent] Baking Soda

<sup>126</sup> As discussed in more detail below, academic research suggests that respondents have difficulty trading off between more than approximately six features in a choice task.

<sup>127</sup> Exhibit 3.

**Figure 8: Deodorant Study—Additional Attributes Included by Dr. Dennis<sup>128</sup>**

<b>Attribute</b>	<b>Levels</b>
Natural	Absent Present
Aluminum Free	Absent Present
B Corp Certification	Absent Present
Wide Stick	Absent Present
Long Lasting	Absent Present
24H Protection	Absent Present
48H Protection	Absent Present
No Artificial Fragrance	Absent Present
Paraben Free	Absent Present
Non-Irritating	Absent Present

49. While not every product description or label claim was shown in each choice task, Dr. Dennis’ design still results in a large number of attributes per choice task. In both the toothpaste and deodorant study, each product profile includes a random selection of Product Descriptions or Label Claims. In Dr. Dennis’ toothpaste survey, each choice screen includes a weighted average of approximately 8 different product description attributes across the three product profiles presented,<sup>129</sup> for a total of 12 attributes (including brand, flavor, product benefits, and price).<sup>130</sup>

<sup>128</sup> Exhibit 14.

<sup>129</sup> Exhibit 4. Note that in the toothpaste survey, the levels of the “Clinically proven / whitening” attribute represent different product claims. Consistent with Dr. Dennis’ design, I have considered these to represent one attribute in this analysis. However, this may understate the cognitive burden on respondents as the different claims comprising the levels of the “Clinically proven / whitening” may appear to respondents to be distinct attributes that they must tradeoff between.

<sup>130</sup> As noted above, Dr. Dennis’ analysis excluded the “Ingredients” attribute. However, the “Ingredients” attribute was presented as a separate attribute in Dr. Dennis’ survey, suggesting that respondents may have perceived the choice tasks to involve an average of 15 attributes.

Similarly, each choice screen in Dr. Dennis' deodorant study includes a weighted average of approximately 7 different label claims,<sup>131</sup> for a total of 9 attributes (including brand and price).<sup>132</sup>

50. Thus, Dr. Dennis' conjoint survey design requires respondents to evaluate and tradeoff between many more features than Dr. Dennis claims in his report and that he attests can be cognitively handled by respondents.<sup>133</sup> Academic researchers caution that "[s]ome respondents have a difficult time dealing with more than about six to eight attributes in full-profile conjoint methods" and when faced with too much information may "resort to simplification strategies to deal with the difficulty of the task."<sup>134</sup> According to a Sawtooth reference guide, many researchers believe that "respondents may become confused or fatigued if they have to view product concepts involving more than about six attributes."<sup>135</sup> Similarly, Green and Srinivasan (1978) have argued that product profiles in a choice-based conjoint experiment should be confined to at most five or six attributes to avoid information overload.<sup>136</sup> They also warn that conjoint results may not be representative of real-life behavior when respondents engage in task simplification as a result of information overload.<sup>137</sup>

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<sup>131</sup> Exhibit 15.

<sup>132</sup> Dr. Dennis claims that limiting the number of product descriptions to between two and four per product profile prevents his choice tasks from becoming overly cognitively burdensome. *See* Dennis 2018 Reply Report, at ¶ 14. However, as explained here, each *choice task* involves an average of 7 to 8 unique descriptions or claims across the three product profiles presented, increasing the cognitive burden on respondents considerably.

<sup>133</sup> *See, e.g.*, Dennis Report, at ¶ 33 ("Surveys with a large number of attributes can be cognitively challenging for respondents in comparing product profiles and making choices"); Dennis 2018 Reply Report, at ¶ 14 ("I have found that the respondents can be cognitively challenged to process large lists of claims").

<sup>134</sup> Orme (2020), at p. 50 (references omitted). *See* Orme, B.K., M.I. Alpert, and E. Christensen, "Assessing the Validity of Conjoint Analysis – Continued," *Sawtooth Software Research Paper Series*, 1997, at pp. 2-3.

<sup>135</sup> Orme (2020), at p. 192.

<sup>136</sup> Green, P.E., and V. Srinivasan, "Conjoint Analysis in Consumer Research: Issues and Outlook," *Journal of Consumer Research*, Vol. 5, 1978, pp. 103-123, at p. 108.

<sup>137</sup> Green, P.E., and V. Srinivasan, "Conjoint Analysis in Consumer Research: Issues and Outlook," *Journal of Consumer Research*, Vol. 5, 1978, pp. 103-123, at p. 108.

51. Notably, Dr. Dennis himself acknowledges in his report that “[s]urveys with a large number of attributes can be cognitively challenging for respondents.”<sup>138</sup> Yet, despite recognizing that complexity of the conjoint survey increases as the number of attributes used to describe the products increases, Dr. Dennis included 14 attributes in his toothpaste survey and 12 attributes in his deodorant survey. While Dr. Dennis presented the unrelated product descriptions and label claims as if they were all part of a singular “Product Descriptions” or “Label Claims on Front of Package” attribute, this does not imply that respondents viewed these unrelated claims as *different levels* of the same feature rather than *separate features*. Dr. Dennis’ description obfuscates his taxing survey design, but his analysis clearly treats the design as if there were 14 attributes in his toothpaste survey and 12 attributes in his deodorant survey.<sup>139</sup> As a result, Dr. Dennis’ survey design likely imposed substantial cognitive burden on respondents, reducing the validity and reliability of the survey results.

**3. *Dr. Dennis’ toothpaste survey signals to respondents that they should consider product ingredients, likely increasing respondents’ reliance on product descriptions relating to ingredients such as the “natural” claim***

52. The design of Dr. Dennis’ “Ingredients” attribute in his toothpaste survey is severely flawed and likely leads respondents to place more weight on the challenged “natural” claim and other attributes relating to product ingredients.

53. Dr. Dennis’ toothpaste survey includes an attribute for “Ingredients” that consists of six different product ingredient lists, each of which contains multiple ingredients. Dr. Dennis’ survey design calls attention to this attribute in several ways, thereby cuing respondents to think about product ingredients as they are completing the choice tasks. For example, while other

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<sup>138</sup> Dennis Report, at ¶ 33.

<sup>139</sup> See Toothpaste\_Attributes\_and\_Levels(1).txt; Deo\_CBC\_Attributes\_and\_Levels.txt.

attributes are each introduced on a single information screen, Dr. Dennis’ survey requires respondents to review seven different information screens for the Ingredients attribute—one introducing the attribute and one for each of the six levels.<sup>140</sup> Similarly, Dr. Dennis’ choice exercises prompt respondents to “Click here to see the ingredients,” with the word “here” presented in bold font and underlined.<sup>141</sup> This emphasis on the word “here” may increase the salience of the Ingredients attribute relative to the real-world shopping environment, which does not necessarily emphasize to consumers that they should review the product ingredients list printed on the packaging. By calling attention to the Ingredients attribute, Dr. Dennis signals to respondents that they *should* consider the product ingredients in making their choices in the subsequent choice exercises. This emphasis increases the salience of the “natural” claim, as it pertains to the product ingredients, thereby amplifying its importance in the choice tasks.

54. Further, Dr. Dennis’ choice screen design presents information about the Ingredients attribute in a way that makes it difficult for respondents to access and compare across the different options in his choice exercise. During the choice exercises, Dr. Dennis’ survey requires respondents to click on a hyperlink to view the ingredients for each product profile.<sup>142</sup> As a result of this design choice, respondents would have had to click 30 different hyperlinks in order to view the ingredient list for each product presented in each choice task throughout the survey.<sup>143</sup> Further, as shown below in Figure 9, the Ingredients information appears in a pop-up window that can only be viewed for one product profile at a time, preventing respondents from directly

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<sup>140</sup> See Dennis Report, at Attachment C4, at pp. 15-26.

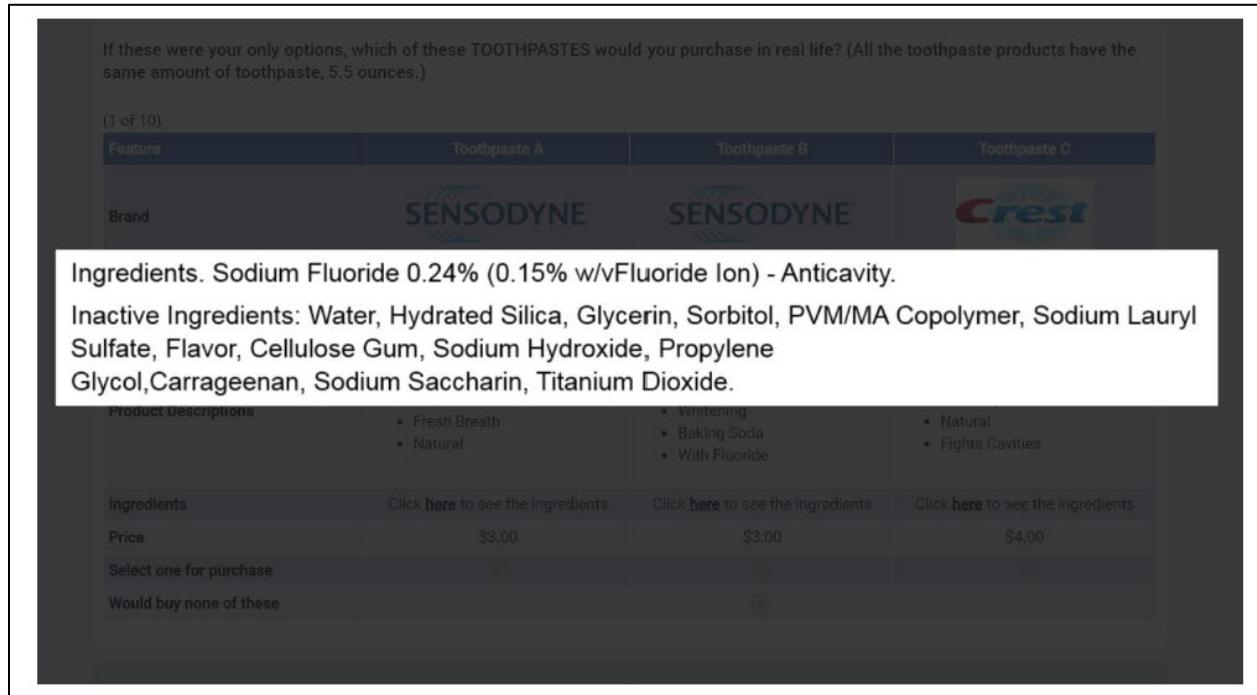
<sup>141</sup> See, e.g., Dennis Report, at Attachment C4, at p. 29.

<sup>142</sup> See Dennis Report, at Attachment C3 and Attachment C4, at p. 29.

<sup>143</sup> Respondents in Dr. Dennis’ toothpaste survey completed 10 choice exercises, each consisting of three hypothetical toothpaste products. See Dennis Report, at ¶ 33.

comparing ingredient lists across product profiles without manually recording this information somewhere else.

**Figure 9: Example of Pop-Up for Ingredients Attribute When Respondent Clicks to View<sup>144</sup>**



55. Due to Dr. Dennis' design choices, it is unlikely that respondents viewed or compared the ingredient lists across product profiles in any systematic manner. Because Dr. Dennis did not collect data on the number of times respondents clicked on the hyperlinks to view each Ingredients list, he cannot know how often respondents viewed the Ingredients information or whether *any* respondents viewed this information for any product.<sup>145</sup> Given that the Ingredients information was obscured during the choice tasks, cues to consider product ingredients may have

<sup>144</sup> Dennis Report, at Attachment C4, at p. 40.

<sup>145</sup> Dennis 2018 Deposition, at p. 120. Dr. Dennis also acknowledged the effort respondents would have had to make to view and compare the "Ingredients" attribute during the choice tasks in his 2018 Reply Report, questioning the assumption that "my respondents would be willing to make the effort and, furthermore, have the cognitive ability to click on the ingredient lists in the conjoint survey, read the ingredient lists carefully... A respondent would need to go through this exercise thirty times in taking the survey." Dennis 2018 Reply Report, at ¶ 21.



further increased the weight respondents placed on other information pertaining to ingredients that was more easily accessible—*i.e.*, the challenged “natural” claim. Dr. Dennis appears to agree that it is likely that respondents relied on more accessible information to make choices, as he acknowledged in his 2018 deposition that respondents “would make their best choices based on the product attributes that are obviously right in front of them. Clearly, the ingredient list is an attribute that required more effort from the respondents.”<sup>146</sup> Thus, Dr. Dennis’ flawed design of the Ingredients attribute may artificially inflate the importance of the “natural” claim relative to the real-world purchasing environment.<sup>147</sup> It also differentiates the choice exercise from real-world in-store purchase scenarios (where, for example, a consumer could hold two toothpastes side-by-side to easily compare their ingredients when making a purchase decision).

**4. *Dr. Dennis’ attribute for the “natural” claim is not well-defined, reducing the validity of the choice data generated***

56. Dr. Dennis does not provide a definition of the “natural” claim in his toothpaste and deodorant studies. With no context or definition for this attribute, Dr. Dennis forces survey respondents to make their own assumptions regarding the meaning of the word “natural” (and what it means when a product profile does not include the word “natural”).

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<sup>146</sup> Dennis 2018 Deposition, at pp. 209-210.

<sup>147</sup> Further, to the extent that respondents did view information about the Ingredients attribute, Dr. Dennis’ survey design allows for internally inconsistent combinations of the Ingredients attribute with other attributes included in the survey. For example, under Dr. Dennis’ survey design, some product profiles may include the Product Description “Fluoride-Free” while at the same time include an Ingredients list that includes fluoride (or vice versa—the product profile could include the description “With Fluoride” and yet show an Ingredients list without fluoride). Similarly, product profiles could include the Product Description “Baking Soda” along with an Ingredients list that does not include sodium bicarbonate (*e.g.*, Ingredients 5 and 6). *See* Dennis Report, at ¶ 41 and Attachment C3 (showing no prohibitions preventing these inconsistent combinations). These combinations are unrealistic and potentially confusing to respondents, increasing the amount of noise in the survey data.

57. In the real world, however, consumers had specific information available to them regarding the meaning of the word “natural” on Tom’s products. During the class period, the packaging for all at-issue Tom’s deodorants and toothpaste products prominently directed consumers to the Tom’s website for more information about Tom’s definition of “natural.”<sup>148</sup> For example, as shown below, the back packaging on Tom’s “Natural Long-Lasting Deodorant” encourages consumers to “[l]earn more about our Stewardship Model and what we mean by ‘natural’ at: [www.tomsofmaine.com](http://www.tomsofmaine.com).”<sup>149</sup>

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<sup>148</sup> Kindness Declaration, at ¶¶ 4-5, 7.

<sup>149</sup> <https://www.cvs.com/shop/tom-s-of-maine-natural-long-lasting-deodorant-prodid-1011244> (viewed 8/8/2022).



58. Similarly, the product packaging for Tom’s “Natural Antiplaque Tartar Control Plus Whitening Toothpaste Peppermint” includes a description of “What makes a product natural and good?” and directs consumers to the Tom’s website for more information about “what ‘natural’ means at Tom’s of Maine.”<sup>150</sup>

<sup>150</sup> <https://www.cvs.com/shop/tom-s-of-maine-natural-antiplaque-tartar-control-plus-whitening-toothpaste-peppermint-prodid-234405> (viewed 8/17/2022).



59. Currently, the Tom's homepage includes a link to "Learn what we mean by natural,"<sup>151</sup> which takes viewers to a webpage describing Tom's "stewardship model."<sup>152</sup> That page explains that Tom's "formula standards" include "ingredients sourced and derived from nature."<sup>153</sup> The Tom's website further elaborates on what this means. As shown in the screenshot below, Tom's explains that it considers an ingredient "naturally sourced" if it "hasn't changed much from how it occurs in the identified source material" and describes an ingredient as "naturally derived" if it has been "modified from [its] original state through additional processing."<sup>154</sup>



60. Similarly, the Tom's website provides additional detail on over 75 specific ingredients used in Tom's products under the heading "Explore Our Ingredients."<sup>155</sup> Each page

<sup>151</sup> <https://www.tomsofmaine.com/> (viewed 8/8/2022).

<sup>152</sup> <https://www.tomsofmaine.com/our-promise/stewardship-model> (viewed 8/8/2022).

<sup>153</sup> <https://www.tomsofmaine.com/our-promise/stewardship-model> (viewed 8/8/2022).

<sup>154</sup> <https://www.tomsofmaine.com/our-promise/ingredients> (viewed 8/23/2022).

<sup>155</sup> <https://www.tomsofmaine.com/our-promise/ingredients> (viewed 8/23/2022).

contains a brief summary description of the ingredient along with information on what the ingredient does, how the ingredient is derived, what other alternative ingredients could fulfill the same purpose, and why Tom's uses the ingredient.<sup>156</sup> For some ingredients, an additional discussion of "Is this the Right Option for Me?" is included.<sup>157</sup>

61. Dr. Dennis' surveys do not provide any of this context, which is available to consumers purchasing Tom's products in the real world, and instead is silent on the meaning of the "natural" claim. Dr. Dennis does not know how respondents to his surveys interpreted the "natural" claim and whether their interpretations are consistent with the information provided by Tom's on its website.<sup>158</sup> As such, the results generated by his surveys do not shed light on consumer preferences for the "natural" claim in the presence of additional information regarding Tom's definition of "natural" available to consumers in the real world.

62. Further, Dr. Dennis does not adequately describe the implication of the *absence* of the "natural" claim or other product descriptions or label claims presented in his surveys. For example, under Dr. Dennis' toothpaste survey design, a respondent may be shown one hypothetical product with a product description consisting of "Natural," "Whitening," and "Helps Prevent Tartar Build-up," and another product profile with a product description consisting of "Helps Prevent Stains," "Fluoride-free," "Clinically proven," and "Whitening."<sup>159</sup> We cannot deduce, nor did Dr. Dennis attempt to specify or control for, what conclusions the respondent may have drawn about the "natural" aspect of the second product, which does not mention "natural" at all. Because Dr. Dennis did not sufficiently describe the implications of the *absence* of a claim, each respondent

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<sup>156</sup> See, e.g., <https://www.tomsofmaine.com/our-promise/ingredients/sodium-fluoride> (viewed 8/22/2022).

<sup>157</sup> See, e.g., <https://www.tomsofmaine.com/our-promise/ingredients/sodium-fluoride> (viewed 8/22/2022).

<sup>158</sup> In his 2018 deposition, Dr. Dennis confirmed that he did not measure what respondents understood the word natural to mean in the context of his surveys and instead made "an assumption that respondents understood the word natural in the kind of common sense way." Dennis 2018 Deposition, at pp. 244-245.

<sup>159</sup> See, e.g., Dennis Report, at Attachment C4, at p. 38.

is left to his or her individual assumptions and beliefs, introducing additional uncertainty and obscuring the interpretation of the estimated partworth utilities for the challenged “natural” claim and other product descriptions. In particular, respondents may assume certain products are “natural” even without the claim being made specific in the choice exercise (particularly since that is what they may have seen previously in the survey). As such, Dr. Dennis will not be able to assess the impact of respondents choosing a product without the “natural” claim.

63. Moreover, because each choice task involves only a subset of attributes, Dr. Dennis’ survey design can be thought of as a “partial-profile” conjoint design. In a partial-profile conjoint design, not all attributes are shown in each choice task. Instead, attributes are rotated across choice tasks, such that each task involves only a subset of attributes. This is similar to what Dr. Dennis has done here. A Sawtooth guide cautions that “[w]ith partial-profile designs, we assume respondents can evaluate the product concepts holding all attributes not represented constant. If respondents cannot maintain this *ceteris paribus* mind set, *the resulting data may be incorrect.*”<sup>160</sup> Dr. Dennis specifically instructed respondents to hold product size constant in his toothpaste survey and product size, fragrance/scent, and format constant in his deodorant survey, but did not include any general instruction to hold constant all other features not shown in a given choice task. Thus, respondents were left to make their own assumptions and inferences about attributes that are not shown in certain choice tasks. Dr. Dennis cannot know whether respondents successfully held all product descriptions or label claims not shown on the choice screen constant across product concepts—if they did not, Dr. Dennis’ survey data may be “incorrect.”<sup>161</sup>

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<sup>160</sup> See [https://sawtoothsoftware.com/help/lighthouse-studio/manual/hid\\_web\\_cbc\\_designs\\_8.html](https://sawtoothsoftware.com/help/lighthouse-studio/manual/hid_web_cbc_designs_8.html) (viewed 8/23/2022) (emphasis added).

<sup>161</sup> As discussed above, research has shown that respondents generally struggle to hold all other attributes not included in the choice task constant. See Allenby, G., J. Brazell, J. Howell, and P. Rossi, “Valuation of Patented

5. ***Dr. Dennis’ cognitive interviews and “pretests” are insufficient to ensure that the attributes and levels included in his survey were well-defined and that respondents understood the survey questions as intended***

64. Prior to launch, it is essential to “pretest” a survey by evaluating the proposed questionnaire with a small sample of respondents who would be eligible to participate in the actual survey to identify and eliminate potential issues with the survey.<sup>162</sup> Pretesting is a critical step of survey design and is important to ensure the validity of the survey results: if difficulties arise when respondents are taking the survey, the results of the survey may be distorted due to respondent misunderstanding or confusion.<sup>163</sup> Survey research textbooks and reference guides recommend pretests as a way to determine whether survey questions are clear and unambiguous<sup>164</sup> and, if not, to identify areas of respondent confusion or difficulty that need to be clarified or changed before the final survey is fielded.<sup>165</sup> According to the *Reference Guide on Survey Research*,<sup>166</sup> pretests should be “administered to a small sample (usually between 25 and 75) of the same type of

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Product Features,” *Journal of Law and Economics*, Vol. 57, No. 3, 2014, pp. 629-663, at p. 642. This is also demonstrated by Dr. Dennis’ own notes from the toothpaste cognitive interviews, which indicate that one respondent made assumptions about whether the presented products were tested on animals. See Dennis Report, at Attachment C5 (at respondent #4).

<sup>162</sup> Malhotra, N.K., “Questionnaire Design and Scale Development,” in *The Handbook of Marketing Research: Uses, Misuses, and Future Advances*, R. Grover and M. Vriens, eds., Sage Publications, 2006, pp. 83-94, at p. 91; Diamond, S.S., “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, Third Edition, The National Academies Press, 2011, pp. 359-423 (“Diamond (2011)”), at pp. 388-389.

<sup>163</sup> According to the *Reference Guide on Survey Research*: “When unclear questions are included in a survey, they may threaten the validity of the survey by systematically distorting responses if respondents are misled in a particular direction, or by inflating random error if respondents guess because they do not understand the question.” Diamond (2011), at p. 388.

<sup>164</sup> Payne, S., *The Art of Asking Questions*, Princeton University Press, 1951; Schaeffer, N., and S. Presser, “The Science of Asking Questions,” *Annual Review of Sociology*, Vol. 29, 2003, pp. 65-88, at p. 81; Converse, J., and S. Presser, *Survey Questions: Handcrafting the Standardized Questionnaire*, Sage Publications, 1986, at pp. 54-55; Dillman, D., *Mail and Telephone Surveys: The Total Design Method*, John Wiley & Sons, Inc., 1978, at p. 156; *Handbook of Survey Research*, Second Edition, eds. Peter V. Marsden and James D. Wright, Emerald Group Publishing Limited, 2010, at p. 513; and Sudman, S., and N. Bradburn, *Asking Questions: A Practical Guide to Questionnaire Design*, Jossey-Bass Publishers, 1982, at pp. 123, 140.

<sup>165</sup> According to the *Reference Guide on Survey Research*, questions that are subject to any confusion or difficulties should be rephrased before the full-scale survey is launched. Diamond (2011), at p. 389; Malhotra, N.K., “Questionnaire Design and Scale Development,” in *The Handbook of Marketing Research: Uses, Misuses, and Future Advances*, R. Grover and M. Vriens, eds., Sage Publications, 2006, pp. 83-94, at pp. 91-92.

<sup>166</sup> Dr. Dennis cites the *Reference Guide on Survey Research* in his report. See Dennis Report, at ¶ 24.



respondents who would be eligible to participate in the full-scale survey.”<sup>167</sup> During the pretest, the interviewer should observe the respondents for any confusion or difficulties respondents may have with the questions and probe for the source of any such confusion or difficulties.<sup>168</sup> Interviewers should be blind to the purpose of the survey to minimize the chance for bias.<sup>169</sup> Questions or responses subject to any confusion or difficulties should then be rephrased before the full-scale survey is launched.<sup>170</sup> The literature on survey research advises that “[a]ll aspects of the questionnaire, including question content, wording, sequence, form and layout, question difficulty, and instruction should be tested” prior to launching a survey.<sup>171</sup>

65. Prior to launching his surveys, Dr. Dennis conducted a number of cognitive interviews that he claims are “the gold-standard for survey pretesting.”<sup>172</sup> Dr. Dennis claims that, in his cognitive interviews, he “showed the respondents the draft price premium surveys and asked for feedback on each survey question in the survey, including the choice screens in the conjoint survey. These cognitive interviews involved one-on-one dialogue between me and real consumers...”<sup>173</sup> According to Dr. Dennis, the results of his interviews “showed that respondents fully understood that they were engaged in a hypothetical shopping experience focused on [] making toothpaste or deodorant product choices and had all the information needed to make the requested choices”<sup>174</sup> and “confirmed that [his] conjoint survey provided a realistic replication of

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<sup>167</sup> Diamond (2011), at pp. 388-389.

<sup>168</sup> Diamond (2011), at pp. 388-389.

<sup>169</sup> Diamond (2011), at p. 374.

<sup>170</sup> Diamond (2011), at pp. 388-389.

<sup>171</sup> Malhotra, N.K., “Questionnaire Design and Scale Development,” in *The Handbook of Marketing Research: Uses, Misuses, and Future Advances*, R. Grover and M. Vriens, eds., Sage Publications, 2006, pp. 83-94, at p. 91.

<sup>172</sup> Dennis Report, at ¶ 47.

<sup>173</sup> Dennis Report, at ¶ 49.

<sup>174</sup> Dennis Report, at ¶ 47.



the marketplace for toothpaste and deodorant products.”<sup>175</sup> However, as I discuss below, Dr. Dennis’ cognitive interview procedure is flawed and cannot be relied upon.

66. First, Dr. Dennis has not produced sufficient documentation to support his claims that the cognitive interview participants confirmed that his surveys “provided a realistic replication of the marketplace,” his selection of attributes “took into account factors that were important to their consumer choices,” and his surveys “provided [respondents] the information they needed to make purchase decisions.”<sup>176</sup> Dr. Dennis produced his own notes from the interviews conducted for his toothpaste study (which reflect his own assessments and interpretations), but did not produce a script of all questions asked or any verbatim transcripts or recordings of the respondents’ answers.<sup>177</sup> Dr. Dennis claims that he does not have any documentation from the interviews conducted for his deodorant survey.<sup>178</sup> As such, there is no way to ascertain whether Dr. Dennis’ claims regarding the cognitive interviews have any merit.

67. This notwithstanding, Dr. Dennis interviewed just seven respondents for his toothpaste survey and eight respondents for his deodorant survey.<sup>179</sup> Dr. Dennis claims that “seven cognitive interviews is sufficient” and that it is his standard to conduct “six to eight cognitive interviews.”<sup>180</sup> However, regardless of whether or not this is *Dr. Dennis’* standard practice, it is significantly fewer interviews than the “between 25 and 75” recommended in the *Reference Guide on Survey Research* and is not a large enough sample from which to draw conclusions about the understanding of the larger population which Dr. Dennis is attempting to sample. Further, as Dr.

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<sup>175</sup> Dennis Report, at ¶ 55.

<sup>176</sup> Dennis Report, at ¶¶ 54-55.

<sup>177</sup> Dennis Report, at Attachment C5.

<sup>178</sup> Without notes or transcripts, Dr. Dennis’ memory about what was said during the interviews could be inaccurate (and presumably could become more inaccurate over time).

<sup>179</sup> Dennis Report, at ¶ 46.

<sup>180</sup> Dennis 2018 Reply Report, at ¶ 36.

Dennis did not provide any demographic information about the respondents, it is unclear whether participants are representative of the target populations for Dr. Dennis' conjoint surveys.<sup>181</sup>

68. In addition, against survey best practices, Dr. Dennis conducted the cognitive interviews himself.<sup>182</sup> As Dr. Shari Diamond writes:

Interviewers who know the identity of the survey's sponsor may affect results inadvertently by communicating to respondents their expectations or what they believe are the preferred responses of the survey's sponsor. To ensure objectivity in the administration of the survey, it is standard interview practice in surveys conducted for litigation to do double-blind research whenever possible: Both the interviewer and the respondent are blind to the sponsor of the survey and its purpose.<sup>183</sup>

In conducting the cognitive interviews himself, Dr. Dennis potentially biased the results of these interviews. Troublingly, as noted above, Dr. Dennis has not produced transcripts or recordings of these cognitive interviews, which prevents me from assessing whether Dr. Dennis' questions were phrased in a clear and non-leading manner and whether Dr. Dennis may have (consciously or subconsciously) cued respondents to answer in certain ways. As such, there is no way to ascertain whether Dr. Dennis' role as the interviewer had any effect on respondents' answers during the interviews.

69. Further, Dr. Dennis also claims that his cognitive interviews informed his decisions of which attributes to include in the surveys and confirmed "that [his] selection of attributes took into account the factors that were important to their consumer choices."<sup>184</sup> However, Dr. Dennis'

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<sup>181</sup> In his 2018 deposition, Dr. Dennis explained that he identified participants for his toothpaste cognitive interviews by placing an ad on Craigslist in the San Francisco Bay area and screened interested individuals based on the same criteria used in his survey, namely that "they had to be recent purchasers of Tom's of Maine." Dennis 2018 Deposition, at pp. 150-152.

<sup>182</sup> Dennis Report, at ¶ 47.

<sup>183</sup> Diamond (2011), at pp. 410-411.

<sup>184</sup> Dennis Report, at ¶¶ 35, 55.

cognitive interviews do not appear to have been designed to elicit opinions on important features of toothpaste and deodorant products; instead, it appears that Dr. Dennis presented respondents with a survey including a certain set of features and asked them if they felt that there were any missing attributes. Respondents may be less likely to identify additional features after their attention is focused on the already-included features. Additionally, Dr. Dennis does not explain how he decided which suggestions regarding features and feature levels from the cognitive interviews to implement and which to ignore. For example, in Dr. Dennis' notes for the toothpaste cognitive interviews, one respondent indicated that the survey was missing information on product size, one respondent indicated that they would like a product description for "no animal testing" and mentioned that "made in the USA" is one of the main things they look for when purchasing toothpaste, one respondent suggested adding Fennel as a flavor, and two respondents indicated that the [REDACTED] price point was too high.<sup>185</sup> While Dr. Dennis did implement some of these suggestions in his toothpaste survey (adding language instructing respondents to hold the product size constant at 5.5 ounces, removing the [REDACTED] price level, and adding Fennel as a level of the flavor attribute), he did not add "no animal testing" or "made in the USA" as product attributes.<sup>186</sup> It is unclear why Dr. Dennis chose to implement some of these suggestions and not others, particularly given that most suggestions were mentioned by the same number of respondents (one).<sup>187</sup>

70. Finally, Dr. Dennis also conducted what he described as "pretests" during which he collected 203 responses for his toothpaste survey and 21 responses for his deodorant survey

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<sup>185</sup> Dennis Report, at Attachment C5.

<sup>186</sup> Dennis Report, at ¶ 50. *See* Dennis Report, at Attachment C5. Both of these claims are found on Tom's product packaging. *See, e.g.*, <https://www.target.com/p/tom-s-of-maine-whole-care-peppermint-toothpaste-4oz/-/A-85907185?preselect=12912294#lnk=sametab> (viewed 8/23/2022) (showing "not tested on animals" on the front of the package and "thoughtfully blended & packaged in the USA" on the back of the package).

<sup>187</sup> Dennis Report, at Attachment C5.

before pausing data collection to “review the collected survey interview data” and “determine[] that the survey questionnaire was functioning appropriately and that the survey data were reliable.”<sup>188</sup> Dr. Dennis characterizes these “pretests” as “a dress rehearsal for the data collection.”<sup>189</sup> While Dr. Dennis uses the term “pretest” to describe this procedure, what he actually did was pilot or soft launch his survey to make sure that the survey link functioned as he intended it to function. While this would allow Dr. Dennis to determine whether there are missing data or other technical issues with the survey, Dr. Dennis’ “pretest” would *not* allow him to determine if respondents were confused or faced other difficulties completing the survey, or how they interpreted the questions. Given that Dr. Dennis did not interact with these “pretest” participants, it is unclear how his “pretest” would have allowed him to “identify any survey questions that were unclear to respondents.”<sup>190</sup>

71. Without properly pretesting his surveys, Dr. Dennis cannot know whether respondents understood the questions and features presented in his survey in the way he intended and, in turn, whether the results of his survey are valid and can be interpreted in the way he has interpreted them.

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<sup>188</sup> Dennis Report, at ¶¶ 64-65.

<sup>189</sup> Dennis Report, ¶ 63.

<sup>190</sup> Dennis Report, at ¶ 63.

**C. Dr. Dennis’ Survey Sample Is Inadequate and Cannot be Relied on to Draw Conclusions about Damages to Class Members**

***1. The vast majority of Dr. Dennis’ survey samples are not members of the classes and any estimates calculated based solely on responses of potential class members are likely to be subject to a larger degree of measurement error***

72. Dr. Dennis defines the target population for his conjoint surveys as “non-institutionalized U.S. adults age 18 and over who had purchased Tom’s of Maine toothpaste (for the toothpaste conjoint survey) or deodorant (for the deodorant conjoint survey) for personal use in the past 12 months (before taking the survey).”<sup>191</sup> Dr. Dennis explains that his sampling approach is based on surveying nationwide adult consumers who are actual purchasers of the Tom’s toothpaste and/or deodorant products.<sup>192</sup> However, as noted above, the Court denied Plaintiffs’ motion to certify a nationwide class of consumers of Tom’s products.<sup>193</sup> Instead, the relevant classes in this matter consist of all persons who purchased Tom’s deodorant and/or toothpaste products on or after September 24, 2015 in the states of New York, Florida, and California.<sup>194</sup>

73. As the table below illustrates, Dr. Dennis’ final sample for his toothpaste survey includes only 115 California residents, 84 Florida residents, and 99 New York residents. Similarly, Dr. Dennis’ final sample for the deodorant study contains only 130 California residents, 70 Florida residents, and 124 New York residents. Dr. Dennis himself notes that “[i]ndustry guidelines recommend having at least 150 respondents for a given segment participating in the conjoint survey and at least 300 conjoint interviews in total for robust quantitative research.”<sup>195</sup> Dr. Dennis’

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<sup>191</sup> Dennis Report, at ¶ 28.

<sup>192</sup> Dennis Report, at ¶ 28.

<sup>193</sup> Opinion and Order, April 23, 2021, at p. 1.

<sup>194</sup> Opinion and Order, April 23, 2021, at p. 32.

<sup>195</sup> Dennis Report, at ¶ 58.

sample sizes for each of the three relevant states fall far short of this threshold. Viewed in isolation, each state has fewer than the 300 respondents Dr. Dennis claims is necessary for “robust quantitative research,” and fewer than the 150 respondents Dr. Dennis claims is necessary for analysis of a particular subgroup. As a result, any conjoint estimates (*e.g.*, price premiums) calculated based on responses of New York, California, or Florida residents alone are likely to be subject to a larger degree of measurement error.<sup>196</sup> Indeed, in his previous deposition regarding the toothpaste survey, Dr. Dennis agreed that “[i]t’s not enough sample to provide a precise estimate of the price premium paid in each of those three states.”<sup>197</sup>

**Figure 10: Respondent Counts by State of Residence<sup>198</sup>**

Geography	Toothpaste Survey		Deodorant Survey	
	N	%	N	%
California	115	11.5%	130	15.3%
Florida	84	8.4%	70	8.2%
New York	99	9.9%	124	14.6%
Rest of U.S.	702	70.2%	525	61.8%
<b>Total</b>	<b>1,000</b>	<b>100.0%</b>	<b>849</b>	<b>100.0%</b>

74. While Dr. Dennis asserts that the results from his nationwide sample “would be generalizable to class members in California, Florida, and New York,”<sup>199</sup> he has not provided any evidence that this is the case.<sup>200</sup> Generally speaking, it is well known that beliefs and values differ

<sup>196</sup> See Orme (2020), Chapter 7, at pp. 57-65.

<sup>197</sup> Dennis 2018 Deposition, at p. 90. See also, Dennis 2018 Deposition, at p. 172 (noting that “we can’t just use 100 respondents, 200 respondents” and get precise utility estimates in a conjoint study). Dr. Dennis also testified that, even considering the three states together, “it’s on the borderline of having enough interviews.” Dennis 2018 Deposition, at p. 89.

<sup>198</sup> See Exhibits 5 and 16. See also, Exhibits 6 and 17.

<sup>199</sup> Dennis Report, at ¶ 28.

<sup>200</sup> In his 2018 Reply Report, Dr. Dennis claimed that the results of his toothpaste simulations suggest that the price premium varies only slightly across U.S. Census Regions: “while the national average is a [REDACTED] ‘natural’

across different regions of the U.S.<sup>201</sup> Here, the small number of New York, California, and Florida residents included in Dr. Dennis' samples does not meet the threshold for "robust quantitative research," reducing the reliability of any comparison of estimated consumer preferences between respondents that reside outside of class states and respondents that reside in class states.<sup>202</sup>

**2. *Dr. Dennis' flawed survey design reduces the number of times "natural" was presented to respondents, further reducing his effective sample size***

75. As discussed above, each hypothetical product profile in Dr. Dennis' toothpaste and deodorant surveys includes a random selection of product descriptions or label claims. As a consequence of this design, each product description or label claim appears in only a subset of the product profiles and choices presented to respondents. This limits the amount of data Dr. Dennis collects from his respondents about each product description or label claim, including, in particular, the at-issue "natural" claim.

76. As shown in Exhibits 7 and 18, the "natural" claim did not appear as a product description for approximately 70 percent of all hypothetical toothpaste products presented to respondents in Dr. Dennis' toothpaste survey and approximately 65 percent of all hypothetical

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price premium, the premium is [REDACTED] in the Northeast, [REDACTED] in the Midwest, [REDACTED] in the South, and [REDACTED] in the West." Dennis 2018 Reply Report, at ¶ 8. First, I note that these Census Regions are broader than the specific states at issue. Further, while Dr. Dennis characterizes these results as demonstrating only slight deviation across regions, it is worth noting that his own results suggest that the region-specific price premiums vary from the national average by [REDACTED] (a difference of more than [REDACTED]). Finally, these analyses appear to use Dr. Dennis' individual partworth utility estimates that were calculated based on the full nationwide sample, such that each individual's estimated utilities incorporate information about their own choices as well as choices from other respondents in other states. The use of the national sample to establish the estimates is common across all three of the at-issue states, which would bring their answers closer together than they would actually be. As such, this analysis may suggest more homogeneous price premiums across geographies than would be obtained if Dr. Dennis had only sampled respondents from the relevant states. Based on the small number of respondents in each of the relevant states in Dr. Dennis' current sample, an analysis based on those respondents alone would likely be associated with large standard errors and wide margins of error.

<sup>201</sup> <https://www.businessinsider.com/regional-differences-united-states-2018-1> (viewed 8/16/2022).

<sup>202</sup> See Dennis Report, at ¶ 58; Orme (2020), Chapter 7, at pp. 57-65.

deodorant products presented to respondents in Dr. Dennis' deodorant survey. As discussed above, it is unclear how respondents understood the implications of the absence of a product description on a particular product profile or how this influenced their responses.

77. Further, unlike in more typical conjoint designs where the same attributes are shown in each choice task with binary attributes presented as "yes/no" or "included/not included" (e.g., a binary selection indicating "natural" or "not natural"), Dr. Dennis' survey design meant that the word "natural" *did not even appear on the choice screen* for choice tasks where none of the three hypothetical product options included the claim. It is entirely unclear whether respondents considered the "natural" claim at all for these choices, and thus they provide little information on respondents' preferences for the "natural" claim. Approximately 34 percent of choice tasks presented to respondents in the toothpaste survey and 24 percent of choice tasks presented to respondents in the deodorant survey did not include the "natural" claim for any of the three hypothetical toothpaste products presented.<sup>203</sup> In other words, on average, the "natural" claim did not appear *anywhere* on the choice screen for approximately 3.4 of the 10 choice tasks presented to each respondent in the toothpaste survey and approximately 2.9 of the 12 choice tasks presented to each respondent in the deodorant survey.

78. As a result, Dr. Dennis' survey design reduces the amount of relevant data generated regarding respondents' preferences for the "natural" claim and increases the noise around Dr. Dennis' utility estimates for the "natural" claim. In particular, this further reduces the size of the relevant dataset for the small sample of respondents within each of the states associated with the classes at issue here. This compounds the issue of Dr. Dennis' already small sample of

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<sup>203</sup> Exhibits 7 and 18.



residents of the relevant states, further contributing to the inadequacy of Dr. Dennis' sample for estimating the value of the challenged "natural" claim to class members.<sup>204</sup>

**3. *Dr. Dennis' survey sample includes consumers who were covered under a previous settlement***

79. I understand that the "natural" claims on Tom's products were also the subject of a previous class action lawsuit, *Gay et al. v. Tom's of Maine, Inc.*, filed in July 2015.<sup>205</sup> In September 2015, the parties to the *Gay* matter entered into a court-approved settlement under which a class consisting of all individuals in the U.S. who purchased at least one Tom's product between March 2009 and September 2015 received monetary relief from Tom's.<sup>206</sup> Tom's also agreed to injunctive relief, including that it would make certain labeling and advertising changes and would include additional information about its ingredients on the Tom's website.<sup>207</sup> As a result of the settlement agreement, the court enjoined *Gay* class members from pursuing future legal claims relating to the "natural" label.<sup>208</sup> As such, I understand from counsel that members of the *Gay* class who also purchased Tom's toothpastes and/or deodorants after September 2015 (*i.e.*, during the class period

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<sup>204</sup> Dr. Dennis claimed in his 2018 Reply Report that "a statistical test of the efficiency of the conjoint design shows...[f]or the 'natural' and other claims in my survey, the statistical precision exceeded Sawtooth's guidelines ([resulting in standard errors of] 1.8% for the claims in my survey versus the Sawtooth guideline of 5%)." Dennis Reply Report, at ¶ 15. Dr. Dennis appears to have conducted these design tests assuming a "full-profile" design in which all attributes are presented in each choice task. However, as noted above, Dr. Dennis presents a subset of "product descriptions" or "label claims" in each choice task, similar to a "partial profile" design. As noted in a Sawtooth resource guide, "[e]stimation of main effects for attributes rotated into choice tasks is significantly less precise than with manageable full-profile CBC designs" as comparatively less information is collected about each attribute. [https://sawtoothsoftware.com/help/lighthouse-studio/manual/hid\\_web\\_cbc\\_designs\\_8.html](https://sawtoothsoftware.com/help/lighthouse-studio/manual/hid_web_cbc_designs_8.html) (viewed 8/23/2022). Further, Dr. Dennis appears to have conducted these design tests on his full sample of respondents, rather than the smaller subsets that are from the class states.

<sup>205</sup> Opinion and Order, April 23, 2021, at pp. 3-4.

<sup>206</sup> Opinion and Order, April 23, 2021, at p. 4.

<sup>207</sup> Opinion and Order, April 23, 2021, at pp. 4-5.

<sup>208</sup> Opinion and Order, April 23, 2021, at pp. 4-5.

at issue in this matter) are barred from suing Tom's and therefore are properly excluded from the current classes.

80. As described previously, Dr. Dennis' survey samples include respondents who purchased Tom's toothpaste or deodorant products in the past year prior to completing the survey. I understand that Dr. Ran Kivetz, another expert retained by Defendants, has determined that there is substantial overlap between consumers who purchased Tom's products during the *Gay* class period (from March 2009 and September 2015) and the current class period (from September 2015 onwards).<sup>209</sup> Specifically, Dr. Kivetz finds that Tom's products are associated with repurchase rates [REDACTED]

[REDACTED]

[REDACTED].<sup>210</sup>

81. Thus, Dr. Dennis' survey samples likely include a significant number of respondents who are properly excluded from the class in this matter. Indeed, Dr. Dennis' own data suggest that a substantial portion of respondents likely purchased Tom's products during the *Gay* class period. As shown in Exhibit 19, approximately 14 percent of respondents to Dr. Dennis' deodorant survey (122 respondents out of 849 total respondents) indicated that they made their first purchase of Tom's deodorants "More than 5 years ago." This likely understates the true percentage of respondents who also purchased Tom's products during the *Gay* class period due to respondents' difficulty recalling past behavior and the fact that respondents may have purchased other Tom's products (beyond deodorants) that were at issue in the previous *Gay* matter.<sup>211</sup> This

<sup>209</sup> Expert Report of Dr. Ran Kivetz, July 22, 2022 ("Kivetz 2022 Report"), at ¶ 15.

<sup>210</sup> Kivetz 2022 Report, at ¶¶ 15, 20, 23. Dr. Kivetz notes that these figures likely understate the true, long-term repeat-purchasing prevalence among Tom's buyers. Kivetz 2022 Report, at ¶ 45.

<sup>211</sup> See also, Kivetz 2022 Report, at ¶¶ 17, 52-55.

notwithstanding, excluding these respondents further reduces the number of respondents in Dr. Dennis' sample who are potential members of the classes (as summarized in the table below), further exacerbating the measurement issues discussed above.

**Figure 11: Deodorant Survey – Respondent Counts by State of Residence, Excluding Purchasers from 5+ Years Ago<sup>212</sup>**

<b>Geography</b>	<b>Number of Respondents (Excluding respondents who first purchased &gt;5 years ago)</b>
California	113
Florida	57
New York	111

**D. Dr. Dennis' Price Premium Analysis Does Not Account for Supply-side Factors and, As Such, His Price Premium Estimates Represent Theoretical Willingness to Pay Values and Not "But-For" Market Prices**

82. It is my understanding that, for purposes of assessing damages in a class action related to false advertising, it is important to consider the difference between the prices class members actually paid for the relevant product and the prices that would have occurred in the "but-for" marketplace. This difference can be thought of as the "price premium" paid for the challenged claim. Based on this framework, it is necessary to determine "but-for" market prices, which are hypothetical and, therefore, must be estimated. From an economic perspective, as market prices are determined by the intersection of supply and demand, a proper analysis of this "but-for" market price necessarily must consider the impact of the challenged claim not only on consumer demand for the product but also on "supply-side factors"<sup>213</sup> in the "but-for" marketplace. Consistent with

<sup>212</sup> See Exhibit 19.

<sup>213</sup> In general, supply-side factors represent those factors or elements that would affect what competitors' (supply-side) behavior would be. These would include production costs, other competitors' behavior, and channel margins, among other things.

this, Courts have emphasized that “[i]n order to prove market value...a party must present evidence of *both* willingness to pay and willingness to sell.”<sup>214</sup>

83. Dr. Dennis claims that his analysis considers “supply-side factors” in a variety of ways, including by: (1) conducting a market simulation,<sup>215</sup> (2) incorporating “market-based attributes” in the design of his conjoint surveys,<sup>216</sup> (3) accounting for “the fact that the quantity supplied of Defendants’ and competitors’ toothpaste and deodorant is a known fact and is fixed as a matter of history,”<sup>217</sup> and (4) including a “none” option in his surveys.<sup>218</sup> However, for the reasons discussed below, none of these measures account for the role of supply-side factors in shaping “but-for” market prices. Dr. Dennis’ results therefore represent a theoretical willingness to pay for the challenged claim, not an equilibrium price premium as he claims, and cannot be used for purposes of determining a price premium associated with the challenged “natural” claim.

***1. Conducting a market simulation does not account for supply-side factors as it measures consumer reaction under the assumption of no competitive reactions***

84. As described in his report, Dr. Dennis conducted what he refers to as “market simulations” using Sawtooth Software to determine price premiums associated with the challenged “natural” claim.<sup>219</sup> In particular, Dr. Dennis simulates a hypothetical market consisting of two similar Tom’s toothpaste or deodorant products that differ only on their inclusion or exclusion of

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<sup>214</sup> *In Re: General Motors LLC Ignition Switch Litigation*, 427 F. Supp. 3d 374, 383 (S.D.N.Y. 2019) The decision also notes that “the diminution in value caused by a vehicle’s alleged hidden defect is calculated as the difference between the *market* value of a non-defective vehicle for which the plaintiff bargained and the *market* value of the vehicle had the defect been disclosed. Market value, in turn, is the price associated with the intersection of the demand curve (which reflects consumers’ willingness to pay) and the supply curve (which reflects producers’ willingness to sell).”

<sup>215</sup> Dennis Report, at ¶¶ 66-67, 69.

<sup>216</sup> Dennis Report, at ¶ 38.

<sup>217</sup> Dennis Report, at ¶ 38.

<sup>218</sup> Dennis Report, at ¶ 70.

<sup>219</sup> Dennis Report, at ¶¶ 67-68.

the challenged “natural” claim (and, in the toothpaste simulation, an option for “none of these”).<sup>220</sup> In the simulation, the price of the simulated product without the challenged claim is lowered to the point where its preference share is equivalent to that of the product with the challenged claim.<sup>221</sup> Dr. Dennis interprets the price differential between these simulated products, expressed as a percentage of the base price of the Tom’s toothpaste or deodorant product used in the simulation, as the “market price premium that is solely attributable to the ‘Natural’ claim used by Defendants.”<sup>222</sup>

85. As Bryan Orme, the CEO of Sawtooth Software, explained, the Sawtooth market simulator tool that Dr. Dennis used to calculate the price premiums in this matter can be used to predict “which product alternatives respondents would choose within competitive scenarios.”<sup>223</sup> That is, the Sawtooth market simulator allows researchers and practitioners to estimate how customers would react (*i.e.*, what they would buy) given a fixed set of options offered to them (*i.e.*, within a certain competitive scenario).<sup>224</sup> Importantly, however, the Sawtooth market simulator measures consumer reaction (in the form of changes to consumer preference shares) under the assumption of “no reaction by the competition.”<sup>225</sup> Without incorporating additional information about the supply-side and competitive responses, the market simulation tool cannot predict equilibrium outcomes; it can only be used to predict consumer choices among a set of options.

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<sup>220</sup> Dennis Report, at ¶¶ 69, 72. Dr. Dennis did not include an option for “none of these” in his deodorant simulation. *See* Dennis Report, at Attachment D9, at sheet “Results Summary” (showing that the simulation included two hypothetical products) and sheet “Simulation Settings” (showing that the “None Option” was “Not included”).

<sup>221</sup> *See* Dennis Report, at ¶ 69, Attachment C10, and Attachment D9.

<sup>222</sup> Dennis Report, at ¶ 74.

<sup>223</sup> Orme (2020), at p. 11.

<sup>224</sup> Orme (2020), at p. 11.

<sup>225</sup> Orme (2020), at p. 81. Dr. Dennis appears to agree that his simulator does not take into account competitive responses. *See* Dennis 2018 Deposition, at pp. 286-287 (“Q. And you didn't consider whether competitors may have adjusted their supply to meet change in demand with a change in the Tom's product; correct? A. Again, that's beyond the scope with a simulator.”).

Therefore, market simulators alone cannot determine market prices, and it would be inappropriate to rely on the output as such.

86. As a result, the market simulator used by Dr. Dennis can, at best, estimate changes in consumer preference shares in response to the removal of the “natural” claim from the packaging of Tom’s at-issue toothpaste and deodorant products *assuming Tom’s competitors do not change their behavior* (e.g., make no adjustments to the prices of competing products). While the market simulator can shed light on the likely changes in demand that would be observed as a result of a change in Tom’s toothpaste and deodorant product offerings, it makes no attempt to predict how competitors might change their behavior in light of changes to the Tom’s products—*i.e.*, the market simulator does not take into account the supply-side considerations. In no way did Dr. Dennis allow for any changes in competitive behavior in light of the changes to Tom’s toothpaste and deodorant product offerings when estimating his price premiums.

87. To illustrate the point, consider the following example. Dr. Dennis used the market simulator to determine that a Tom’s deodorant product without the “natural” claim would need to be priced at [REDACTED] if it was to have the same preference share as an otherwise identical Tom’s deodorant product priced at [REDACTED] with the “natural” claim.<sup>226</sup> It is unclear why it would be optimal (or profit-maximizing) for Tom’s to set its wholesale, and/or recommended prices to retailers, such that its consumer preference share remains unchanged when consumer perception of its products changes. Moreover, the market simulation conducted by Dr. Dennis makes no reference to competing deodorant products. If Tom’s would indeed have chosen to lower the wholesale and/or recommended price of its deodorant products to [REDACTED] in the counterfactual world where it did not include the “natural” claim, one cannot use the market simulator to determine how a competing

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<sup>226</sup> Dennis Report, ¶ 76.

deodorant manufacturer would alter its prices in response or how any changes in price by competing manufacturers would affect Tom's preference shares. Nor does it allow one to predict how Tom's may choose to respond to its competitors' actions and how that would affect Tom's preference shares in the but-for world. For example, if consumer perception changes and demand for the at-issue Tom's products goes down, then the demand for the competitive products would, presumably, go up. Competitors, given the higher demand (or weaker competition), could choose to raise their prices. In turn, higher competitive prices imply that Tom's may not need to lower its wholesale and/or recommended prices for deodorants to [REDACTED] to keep the demand for its products constant. These supply-side considerations (*i.e.*, competitive changes in behavior in response to product changes) are not accounted for in Dr. Dennis' simulations and, therefore, Dr. Dennis' reliance on the output of those simulations as market prices is inappropriate.

88. Academic literature emphasizes that a conjoint survey *on its own* does not form an adequate basis for an equilibrium calculation that would allow one to understand the marketplace implications of a change in a product offering. For example, academic researchers have emphasized that even well-designed conjoint surveys generate “purely demand-based measures such as [willingness to pay]” and must be supplemented with “information on competitive offerings and cost” if they are to assess changes in equilibrium prices and profits.<sup>227</sup> A Sawtooth reference guide cited by Dr. Dennis in his report<sup>228</sup> similarly emphasizes that “[t]he market simulator focuses on the demand side of the marketing equation; but it is also important to pay attention to the supply side [...]”<sup>229</sup> The same reference guide warns that “conjoint utilities cannot account for many real-world factors that shape market shares, such as length of time on the market,

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<sup>227</sup> Allenby, G., J. Brazell, J. Howell, and P. Rossi, “Economic Valuation of Product Features,” *Quantitative Marketing Economics*, Vol. 12, 2014, pp. 421-456, at pp. 421, 422, 424 (emphases added).

<sup>228</sup> Dennis Report, at ¶ 68.

<sup>229</sup> Orme (2020), at p. 92.

distribution, out-of-stock conditions, advertising, effectiveness of sales force, and awareness” and emphasizes that “divorcing oneself from the idea that conjoint simulations predict market shares is one of the most important steps to getting value from a conjoint analysis study and the resulting simulator.”<sup>230</sup>

89. In sum, Dr. Dennis’ reliance on Sawtooth’s market simulator does not account for supply-side factors. Dr. Dennis’ analysis falls far short of allowing one to determine the market price for a Tom’s toothpaste or deodorant product that would prevail without inclusion of the “natural” claim. In fact, as discussed above, I understand that Tom’s removed the “natural” claim from certain deodorant products in 2021. Dr. Fox finds no evidence suggesting that these label changes led to changes in wholesale prices or retail prices.<sup>231</sup> This discrepancy further highlights that Dr. Dennis’ market simulation is not capable of determining equilibrium market prices.

**2. *Incorporating “market-based attributes” in his conjoint design does not account for supply-side factors in the “but-for” world***

90. Dr. Dennis claims that he accounted for supply-side factors by including “market-based price points for Tom’s of Maine toothpaste and deodorants and their competitors based on actual real-world prices that consumers have paid for the products.”<sup>232</sup> The actual prices included by Dr. Dennis in his conjoint survey reflect the equilibrium prices of toothpaste and deodorant products given the set of marketplace offerings *in the actual world*. That is, these prices incorporate *historical* best responses of each competitor in the marketplace. However, a competitor’s optimal response (*i.e.*, the chosen price) may change once the set of competing product offerings changes. To determine the value of the challenged “natural” claim, one needs to recompute the equilibrium

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<sup>230</sup> Orme (2020), at pp. 104-105.

<sup>231</sup> Fox Report, at Section IV.

<sup>232</sup> Dennis Report, at ¶ 38.



price in a counterfactual world where the at-issue Tom’s products do not include the “natural” claim. This, in turn, requires one to determine how competitors would have reacted to the change in Tom’s labeling and consumer perception of Tom’s products (*e.g.*, what prices they would have set in that counterfactual world or how they might have changed the labeling for their own products<sup>233</sup>). When the set of marketplace offerings changes, as Dr. Dennis assumes in his price premium calculations, one needs to re-evaluate the competitors’ best response to the change to determine the new equilibrium prices. As such, prices charged for toothpaste and deodorant products in the actual world need no longer reflect the optimal pricing decisions given the new competitive landscape.

91. Thus, Dr. Dennis’ inclusion of actual prices for the toothpaste and deodorant products in his conjoint survey does not imply that “supply-side factors” were considered in Dr. Dennis’ market simulation analysis.

### ***3. Holding quantity fixed does not account for supply-side factors***

92. Dr. Dennis claims that his analysis accounts for supply-side factors by considering “the fact that the quantity supplied of Defendants’ and competitors’ toothpaste and deodorant products is a known fact and is fixed as a matter of history.”<sup>234</sup> Mr. Weir similarly claims that “it would be antithetical to the concept of class definition to suggest that the quantity supplied [would] be anything other than the actual number of units sold by Defendants.”<sup>235</sup>

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<sup>233</sup> For example, competitors might emphasize the “natural” claim on their own products to differentiate themselves from Tom’s. Alternatively, competitors might remove the “natural” claim if their products also include some of the disputed ingredients here.

<sup>234</sup> Dennis Report, at ¶ 38.

<sup>235</sup> Weir Report, at ¶ 39.

93. Rather than accounting for supply-side factors and willingness to sell, however, Dr. Dennis and Mr. Weir are merely assuming these considerations away. Dr. Dennis and Mr. Weir are, in effect, assuming that the supply curve is vertical, such that the quantity supplied would be the same in the “but-for” world as in the actual world but have not presented evidence to support that assumption. Neither Dr. Dennis nor Mr. Weir attempt to demonstrate that the supply curve for Tom’s toothpastes and deodorants is vertical; instead, they merely assert that it would be inappropriate to consider changes in quantity in the “but-for” world in the context of a class action matter.<sup>236</sup> This logic is nonsensical and defies economic reasoning.

94. In fact, courts have explicitly held that an analysis of “but-for” market price (and therefore the price premium for the challenged claim) “requires consideration of the quantity of products suppliers might be willing to sell at a given price that consumers are willing to pay and, if that quantity is lower than the quantity actually sold, the likelihood that the difference in market price would be different than the difference in consumer willingness to pay.”<sup>237</sup> A recent decision explained, “sellers might not be willing to accept the price that the quantity of buyers of non-defective products are willing to pay for defective products, except at much lower quantities. In other words, sales of products with known defects *would not occur* in the market at that price. That amount is, therefore, not the but-for market price.”<sup>238</sup> Contrary to Mr. Weir’s claim that it is “antithetical to the concept of class definition” to suggest that the quantity supplied would be different in the “but-for” marketplace, the same court decision emphasized that while it is appropriate to use the actual quantity supplied to calculate aggregate damages for the class, it is

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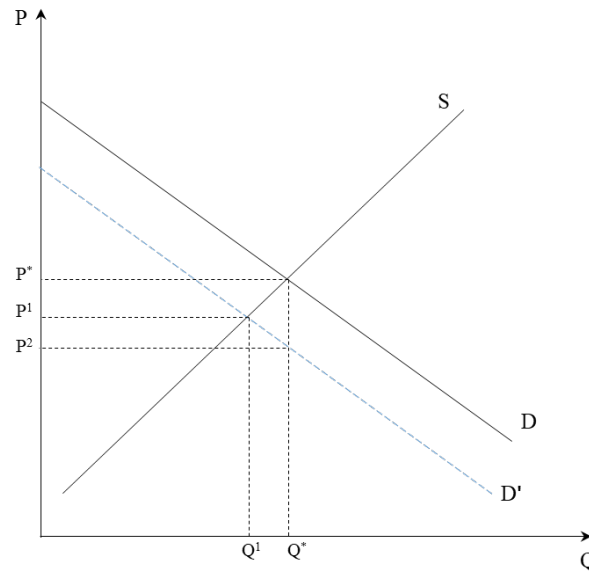
<sup>236</sup> Weir Report, at ¶ 39.

<sup>237</sup> *In Re: General Motors LLC Ignition Switch Litigation*, 427 F. Supp. 3d 374, 385 (S.D.N.Y. 2019).

<sup>238</sup> *In Re: General Motors LLC Ignition Switch Litigation*, 427 F. Supp. 3d 374, 385-386 (S.D.N.Y. 2019).

not proper to assume a vertical supply curve when measuring the price premium.<sup>239</sup> Thus, plaintiffs must “present evidence of willingness to sell to determine market price (and then multiply the quantity actually supplied, held constant, by the price premium to determine total damages for the class).”<sup>240</sup>

95. As illustrated below, holding quantity supplied constant in the “but-for” world overstates the difference in prices that result from a reduction in demand if the supply curve is not vertical. The figure below provides a graphical illustration of this point.<sup>241</sup>



96. Under the assumption that consumers, in aggregate, place some value on the challenged claim, the removal of the challenged claim would result in a reduction of demand for Tom’s toothpastes and deodorants from  $D$  to  $D'$ . Holding quantity fixed at  $Q^*$ , as Dr. Dennis and

<sup>239</sup> *In Re: General Motors LLC Ignition Switch Litigation*, 427 F. Supp. 3d 374, 388 (S.D.N.Y. 2019). While the Court acknowledged that “[a] damages model incorporating a vertical supply curve could conceivably succeed if it were supported by evidence that, in fact, sellers would accept anything consumers are willing to pay,” Dr. Dennis and Mr. Weir have not presented sufficient evidence to support their assumption here. *See, In Re: General Motors LLC Ignition Switch Litigation*, 427 F. Supp. 3d 374, 386 (S.D.N.Y. 2019).

<sup>240</sup> *In Re: General Motors LLC Ignition Switch Litigation*, 427 F. Supp. 3d 374, 388 (S.D.N.Y. 2019). *See also, Hadley v. Kellogg Sales Co.*, 324 F. Supp. 3d 1084, 1104-106 (N.D. Cal. 2018).

<sup>241</sup> Demand and supply are shown to be fully linear to simplify exposition.

Mr. Weir suggest, implies a reduction in price from  $P^*$  to  $P^2$ , which completely ignores any movement along the supply curve. Instead, allowing quantity to change in response to this reduction in demand results in equilibrium prices and quantities of  $P^1$  and  $Q^1$  in the “but-for” world. Thus, holding quantity fixed (as Dr. Dennis and Mr. Weir have done in their analyses) *overstates* the “but-for” equilibrium price premium for Tom’s toothpastes and deodorants (*i.e.*, shifting from  $P^*$  to  $P^2$  is larger than the shift from  $P^*$  to  $P^1$ ).

#### 4. *Including a “none” option does not account for supply-side factors*

97. Dr. Dennis claims that “[t]he design of my conjoint survey and my market simulator allowed me to calculate the price premium attributable to the challenged label for the marginal consumer, that is, the additional price that the marginal consumer would pay for the product with the ‘natural’ claim.”<sup>242</sup> To support this contention, Dr. Dennis cites a Law360 article by Daniel McFadden and others, which Dr. Dennis characterizes as suggesting that “the price premium of the ‘infringing feature’...is the same as the willingness to pay of the marginal consumer that can be identified by offering respondents a ‘no buy’ option in the conjoint surveys.”<sup>243</sup> Dr. Dennis asserts that by including a “none of these” option in the choice sets in his toothpaste survey and by including a “confirmation dual-response none question” in the deodorant conjoint survey, he identified the “marginal consumer” and the market price premium for the challenged “natural” claim.<sup>244</sup>

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<sup>242</sup> Dennis Report, at ¶ 70.

<sup>243</sup> Dennis Report, at ¶ 70. *See also*, <https://www.law360.com/articles/475390/print?section=ip> (viewed 8/2/2022).

<sup>244</sup> Dennis Report, at ¶ 70. As noted here, Dr. Dennis used different formats for the “none option” across his surveys. Research has found that the presentation of the none option can influence how often it is selected, which in turn can influence the results of the conjoint study. The dual response none option has been found to increase the frequency of the outside option, which “helps reduce a conjoint survey bias toward higher purchase rates than in the actual marketplace.” Including the none option in the choice exercise itself has been found to result in an unrealistically low rate of selection of the none option. Allenby, G., J. Brazell, J. Howell, and P.

98. Despite Dr. Dennis' claims, including a "none option" does not eliminate the need to consider the role of supply-side factors in shaping market prices. Including a "none option" provides information only about consumer choices (demand-side information), but says nothing about production costs or other supply-side factors that might affect Tom's and competitors' responses. Consistent with this, the authors of the Law360 article cited by Dr. Dennis have clarified in other publications that conjoint analysis—whether or not it includes a "none option"—cannot be used to identify the market price premium without further consideration of the supply side.<sup>245</sup> For example, Dr. McFadden submitted a declaration in another matter clarifying that, while the Law360 article cited by Dr. Dennis discussed the importance of determining the willingness to pay of the marginal consumer, it "did not indicate that this could be done without considering the supply side." In his declaration, Dr. McFadden explicitly stated that "[t]he marginal consumer is the consumer whose [willingness to pay] is equal to the market price and one cannot compute a market price based on even a validly designed conjoint analysis alone."<sup>246</sup> Similarly, Lisa Cameron, a co-author of the Law360 article cited by Dr. Dennis, described in another published article that conjoint analysis alone cannot determine the market price premium.<sup>247</sup>

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Rossi, "Economic Valuation of Product Features," *Quantitative Marketing Economics*, Vol. 12, 2014, pp. 421-456, at pp. 434-435.

<sup>245</sup> See, e.g., Memorandum of Law in Support of General Motors LLC's Motion to Exclude the Opinions of Stefan Boedeker, September 21, 2018, *In Re: General Motors LLC Ignition Switch Litigation*, Case No. 14-MD-2543 (S.D.N.Y.), at p. 39; Allenby, G., P. Rossi, L. Cameron, and Y. Li, "Computing Damages in Product Mislabeling Cases: Plaintiffs' Mistaken Approach in *Briseno v. ConAgra*," *Product Safety & Liability Reporter*, 45 PSLR 208, 2017, at p. 3, available at [https://www.brattle.com/wp-content/uploads/2017/10/7257\\_computing\\_damages\\_in\\_product\\_mislabeling\\_cases\\_plaintiffs\\_mistaken\\_approach\\_in\\_briseno\\_v\\_conagra.pdf](https://www.brattle.com/wp-content/uploads/2017/10/7257_computing_damages_in_product_mislabeling_cases_plaintiffs_mistaken_approach_in_briseno_v_conagra.pdf).

<sup>246</sup> Memorandum of Law in Support of General Motors LLC's Motion to Exclude the Opinions of Stefan Boedeker, September 21, 2018, *In Re: General Motors LLC Ignition Switch Litigation*, Case No. 14-MD-2543 (S.D.N.Y.), at p. 39.

<sup>247</sup> Allenby, G., P. Rossi, L. Cameron, and Y. Li, "Computing Damages in Product Mislabeling Cases: Plaintiffs' Mistaken Approach in *Briseno v. ConAgra*," *Product Safety & Liability Reporter*, 45 PSLR 208, 2017, at p. 3, available at [https://www.brattle.com/wp-content/uploads/2017/10/7257\\_computing\\_damages\\_in\\_product\\_mislabeling\\_cases\\_plaintiffs\\_mistaken\\_approach\\_in\\_briseno\\_v\\_conagra.pdf](https://www.brattle.com/wp-content/uploads/2017/10/7257_computing_damages_in_product_mislabeling_cases_plaintiffs_mistaken_approach_in_briseno_v_conagra.pdf).

**E. Dr. Dennis’ Price Premium Analysis Is Unsound and Generates Implausible Results that Render It Unusable for Purposes of Assessing the Impact of the Challenged “Natural” Claim**

***1. The data underlying Dr. Dennis’ price premium calculations are illogical and internally inconsistent***

99. My review of the data underlying Dr. Dennis’ price premium calculations suggests that Dr. Dennis’ conjoint data are invalid and cannot be relied upon. In particular, Dr. Dennis required his analysis to produce utility estimates that conform to a relationship where demand goes up when prices go down, all else equal. This in effect ignores the respondents’ actual answers, which did not always conform to this relationship, and forces the results of his analysis to indicate that consumers prefer paying less to paying more, all else equal. In other words, Dr. Dennis imposed his own answers onto his data to ensure that the results aligned with economic reasoning. He needed to do so to produce “reasonable results” given his survey methodology failed to do so.

100. More specifically, in conjoint surveys, respondents make choices between products with varying attribute levels. These choice data are then analyzed using a statistical model, such as hierarchical Bayesian estimation, to produce estimated partworth utility values for each respondent for each of the attribute levels included in the survey. When defining the model to transform choice data into estimated partworth utilities, the researcher has the option to impose certain assumptions and requirements on the analysis of the respondents’ data to force certain results. In this case, Dr. Dennis chose an option in Sawtooth that, regardless of what respondents’ choices actually implied about their preferences, forced the model to produce estimated partworths for price that follow a particular order: namely, that lower prices have higher estimated partworth utilities than higher prices (that is, lower prices are preferred to higher prices, all else equal).

101. However, Dr. Dennis would have obtained different results had he not imposed this requirement and instead allowed Sawtooth to estimate partworths based on the raw choice data alone. To illustrate the impact of Dr. Dennis' interference with the partworths implied by respondents' actual data, I re-estimated partworth utilities without imposing the requirement that the price partworths follow a particular order (in other words, letting the raw data speak for itself without forcing any particular results). As summarized in Exhibit 8, my analysis reveals that 682 respondents to Dr. Dennis' toothpaste survey, or 68.2 percent of the sample, expressed a preference for at least one higher price point compared to at least one lower price point, all else equal. Similarly in Exhibit 20, re-estimating Dr. Dennis' deodorant partworth utilities without constraining price reveals that 651 respondents, or 76.7 percent of the sample, indicated a preference for a higher price compared to a lower price, all else equal. These findings contradict basic economic theory and common sense that consumers will always prefer the lower price for two identical products.

102. These results call into question the validity of Dr. Dennis' conjoint survey design and the data generated by his conjoint surveys with respect to price and, in turn, cast doubt on any analyses based on those data. The widespread irrational preferences for higher prices compared to lower prices, all else equal, suggests that many respondents to Dr. Dennis' surveys may not have understood the choice exercises or may have failed to devote sufficient attention to the choice tasks from which Dr. Dennis draws his results. Alternatively, respondents may have failed to adhere to the necessary conjoint assumption that they "hold everything else constant" in their choice. Regardless of the reason, these irrational responses suggest that Dr. Dennis' survey data are invalid and cannot be relied upon.

**2. *Dr. Dennis’ analysis generates unreasonably high price premiums at lower price points, calling into question the validity of the analysis***

103. As described above, Dr. Dennis’ price premium analysis uses Sawtooth’s market simulator tool to estimate the price at which a Tom’s toothpaste or deodorant product without the “natural” claim would have the same preference share as an otherwise identical Tom’s toothpaste or deodorant product with the “natural” claim priced at a base price point selected by Dr. Dennis. Dr. Dennis notes that he “purposely made an analytic assumption” and selected “the most expensive price point in the toothpaste market simulation (██████) and deodorant market simulation (██████).”<sup>248</sup> Dr. Dennis claims that this assumption “produces conservative, minimal estimates of the price premiums”<sup>249</sup> because “economic actors are sensitive to the price (with lower valuations for the product as the price increases).”<sup>250</sup> Dr. Dennis did not present the results of his price premium analysis under any other base price points.

104. If Dr. Dennis’ price premium analysis is valid at the highest price point tested by Dr. Dennis, it should also be valid at other price points tested in his survey. However, re-running Dr. Dennis’ price premium analysis at lower price points results in unreasonably high price premium estimates. As shown in Exhibit 9, re-running Dr. Dennis’ toothpaste simulation at a base price of ██████ yields a price premium of ██████ percent (██████ out of ██████), implying that the “natural” claim accounts for ██████ of the total value of Tom’s toothpaste products. As summarized in Exhibit 21, re-running Dr. Dennis’ deodorant simulation at a base price of ██████ suggests that the “natural” claim is associated with a price premium of ██████ percent (██████ out of ██████). At a base price of ██████, Dr. Dennis’ deodorant simulation suggests that the “natural” claim

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<sup>248</sup> Dennis Report, at ¶ 71.

<sup>249</sup> Dennis Report, at ¶ 71.

<sup>250</sup> Dennis Report, at ¶ 71.



accounts for [REDACTED] of the price of the product.<sup>251</sup> These estimates lack credibility in light of evidence that suggests that other toothpaste and deodorant features are important to consumers,<sup>252</sup> casting doubt on the validity of Dr. Dennis' methodology and resulting price premium estimates at *any* price point.

105. Additionally, the dramatic differences in price premiums estimated at different base prices demonstrates that Dr. Dennis' analysis is highly sensitive and unreliable. The fact that Dr. Dennis' estimated price premium percentage for the "natural" claim approximately *doubles* simply because the base price of the product decreases by one dollar<sup>253</sup> is nonsensical and, as shown in Exhibits 9 and 21, suggests that the value of the "natural" claim in dollar terms increases simply because product is cheaper overall.<sup>254</sup> Dr. Dennis offers no explanation as to why his results vary so radically based simply on the base price he uses. These results further demonstrate that Dr. Dennis' methodology is invalid and cannot be relied upon.

106. Moreover, Dr. Dennis *could not* have estimated the price premium at several lower price points because calculating the price of the product without the "natural" claim would require

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<sup>251</sup> Exhibit 21. Dr. Dennis suggests that these lower price points are realistic. According to Dr. Dennis, the base prices tested in his simulations are "substantially higher than indicated by the average retail pricing data made available to Mr. Weir and me, and also represents the high end of price points observed by my market scan of retail prices." Dennis Report, at ¶ 71. Dr. Dennis also notes that the price points tested in his surveys are based on "actual real-world prices that consumers have paid for the products." Dennis Report, at ¶ 38.

<sup>252</sup> See, e.g., COLGATETOMS00162929, at slide 72 (showing that even those who purchase "natural" deodorant products indicate that a variety of other considerations are important to them, including odor protection, non-irritating, sensitive skin, and wetness protection, among others); COLGATETOMS00005158, at slide 84 (showing that purchasers of natural toothpastes also place importance on other factors such as cavity prevention, ability to fight germs and bacteria, efficacy against plaque, and ability to strengthen tooth enamel, among others).

<sup>253</sup> See Exhibit 9 (showing that the estimated price premium increases from [REDACTED] percent to [REDACTED] percent when the base price decreases from [REDACTED] to [REDACTED] for toothpaste) and Exhibit 21 (showing that the estimated price premium increases from [REDACTED] percent to [REDACTED] percent when the base price decreases from [REDACTED] to [REDACTED] for deodorant).

<sup>254</sup> See Exhibit 9 (showing that the price premium in dollar terms increases from [REDACTED] to [REDACTED] when the base price of the product decreases from [REDACTED] to [REDACTED] for toothpaste) and Exhibit 21 (showing that the price premium in dollar terms increases from [REDACTED] to [REDACTED] when the base price of the product decreases from [REDACTED] to [REDACTED] for deodorant).

extrapolation outside the range of prices tested in the conjoint survey ( [REDACTED] to [REDACTED] for the toothpaste survey and [REDACTED] to [REDACTED] for the deodorant survey). As shown in Exhibit 9, Dr. Dennis' analysis cannot estimate the price premium for the "natural" claim for toothpaste products at a base price of [REDACTED] or lower because the price of the product without the "natural" claim would have to be lowered below [REDACTED] (outside the range tested by Dr. Dennis' toothpaste survey) to result in equal shares of respondents choosing each option. Similarly, as shown in Exhibit 21, Dr. Dennis' analysis cannot estimate the price premium for the "natural" claim for deodorant products at a base price of [REDACTED] or lower because the price of the product without the "natural" claim would be below [REDACTED], the lowest price point tested in Dr. Dennis' deodorant survey. In other words, Dr. Dennis' analysis is incapable of calculating the price premium associated with the "natural" claim at lower price points, rendering his analysis irrelevant for purposes of calculating damages for many consumers in the class.<sup>255</sup>

**3. *Dr. Dennis' analysis generates implausible price premium estimates for the included product descriptions exceeding the price of the entire product***

107. According to Dr. Dennis, his price premium estimates reflect the amount "that purchasers paid as a result of the challenged 'natural' claim as a fraction of the total price paid by consumers for the Tom's of Maine toothpaste and deodorant products."<sup>256</sup> Mr. Weir characterizes a price premium as representing "the portion of the market price of the Products solely attributable to Defendants' misrepresentations."<sup>257</sup> If one takes these characterizations at face value, it follows

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<sup>255</sup> Based on Nielsen data [REDACTED]  
[REDACTED] ' Additionally, 4 out of the 7 respondents who participated in Dr. Dennis' cognitive interviews for his toothpaste survey said they usually purchase toothpaste for [REDACTED] or less. Dennis Report, at Attachment C5.

<sup>256</sup> Dennis Report, at ¶ 69.

<sup>257</sup> Weir Report, at ¶ 17.

that the sum of the “price premiums” associated with all of a product’s features should not exceed the sales price of the product itself (or, in percentage terms, the “price premium” percentages should never exceed more than 100 percent for a given product).<sup>258</sup> I applied Dr. Dennis’ methodology and market simulator tool to estimate the “price premiums” associated with other features included in Dr. Dennis’ toothpaste and deodorant surveys and not just the challenged “natural” claim. Specifically, I followed the methodology outlined in Dr. Dennis’ report<sup>259</sup> to estimate the price premium associated with various other product descriptions or label claims included on Tom’s products in addition to the “natural” claim.

108. For the toothpaste survey, the estimated price premiums for the subset of product descriptions included on the hypothetical Tom’s toothpaste product modeled in Dr. Dennis’ simulations are summarized in the table below.<sup>260</sup> As shown, the sum of the price premiums for just these product descriptions exceed the [REDACTED] base price of Tom’s toothpaste used in Dr. Dennis’ simulation. This is before accounting for other attributes that Dr. Dennis tested (such as Brand, Flavor, and Product Benefits, all of which have higher importance estimates than each of the product descriptions tested below<sup>261</sup>) and other attributes he did *not* test (such as ADA approval).

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<sup>258</sup> Summing the price premiums for individual features is entirely consistent with Dr. Dennis’ analysis, which assumes a linear additive utility model without any interaction effects. Dr. Dennis’ analysis measures only main effects (*i.e.*, treating each attribute as independent of all other attributes) and fails to include any interaction effects (*i.e.*, any potential interactions between attributes in which the utility of one attribute level is affected by the level of another attribute). *See* Dennis Report, at Attachments C9 and D6 (showing estimated partworth utilities for each level of each attribute, with no interaction terms). A Sawtooth reference manual explains that “[t]ypical conjoint analysis models” (*i.e.*, those that do not model interaction effects) “assume that the utility of a product alternative is equal to the sum of the values of its independent parts.” As Dr. Dennis assumed that “the utility of a product alternative is equal to the sum of the values of its independent parts” in estimating his partworth utilities, my analysis here appropriately tests the face validity of Dr. Dennis’ results by summing price premiums for individual features. *See* Orme (2020), at p. 200.

<sup>259</sup> Dennis Report, at ¶¶ 66-77.

<sup>260</sup> As described in his report, Dr. Dennis’ toothpaste simulations are based on a Tom’s toothpaste product with a price of [REDACTED] and the following product descriptions: “Fluoride free, Whitening, Fresh Breath, Helps Prevent Tartar Build-up, No Artificial Dyes or Sweetener.” Dennis Report, at ¶ 72.

<sup>261</sup> *See* Exhibit 3, at column [B].

**Figure 11: Toothpaste Survey – Estimated Price Premiums Associated with Tom’s Toothpaste Product Descriptions<sup>262</sup>**

Product Descriptions	Price Premium	Percent Price Premium (Base Price of [REDACTED])
Natural	[REDACTED]	[REDACTED]
Fluoride-free	[REDACTED]	[REDACTED]
Whitening	[REDACTED]	[REDACTED]
Fresh Breath	[REDACTED]	[REDACTED]
Helps Prevent Tartar Build-up	[REDACTED]	[REDACTED]
No Artificial Dyes or Sweeteners	[REDACTED]	[REDACTED]
<b>Total</b>	[REDACTED]	[REDACTED]

109. For the deodorant survey, the table below summarizes the estimated price premiums for a subset of label claims included on one of Tom’s best-selling deodorant products, “Long Lasting Deodorant in Wild Lavender.”<sup>263</sup> As shown, the “price premiums” for these six label claims alone exceed the [REDACTED] base price used by Dr. Dennis by [REDACTED] (or [REDACTED] percent), before accounting for any other product features.<sup>264</sup>

<sup>262</sup> Exhibit 10.

<sup>263</sup> Dr. Dennis’ deodorant simulations are based on a hypothetical Tom’s deodorant product that includes the “natural” claim and no other label claims. Unlike in his toothpaste simulation, Dr. Dennis does not identify any other label claims that are included on Tom’s deodorant products. For purposes of my analysis, I identified a best-selling Tom’s deodorant product based on produced sales data and reviewed the packaging of this product to identify which claims are associated with the product. *See* description in Exhibit 22. *See also*, COLGATETOMS00004908, at sheet ‘NielseTL US & Scantrack Markets’; <https://www.walgreens.com/store/c/tom%27s-of-maine-long-lasting-deodorant-lavender/ID=prod6021177-product> (viewed 8/19/2022); <https://www.safeway.com/shop/product-details.151250073.html> (viewed 8/19/2022).

<sup>264</sup> Exhibit 22. Calculated as [REDACTED]

**Figure 12: Deodorant Survey – Estimated Price Premiums Associated with Tom’s Deodorant Label Claims<sup>265</sup>**

Label Claims	Price Premium	Percent Price Premium (Base Price of [REDACTED])
Natural	[REDACTED]	[REDACTED]
Aluminum Free	[REDACTED]	[REDACTED]
Long Lasting	[REDACTED]	[REDACTED]
24H Protection	[REDACTED]	[REDACTED]
No Artificial Fragrance	[REDACTED]	[REDACTED]
Paraben Free	[REDACTED]	[REDACTED]
<b>Total</b>	[REDACTED]	[REDACTED]

110. These results are implausible and discredit Dr. Dennis’ analysis and interpretation of the resulting “price premiums.” Simply using Dr. Dennis’ methodology to estimate the implied price premiums associated with some of the other features of Tom’s products disproves Dr. Dennis’ and Mr. Weir’s assertions that Dr. Dennis’ analysis identifies the “the portion of the market price of the Products solely attributable to Defendants’ misrepresentations.”<sup>266</sup>

**F. Dr. Dennis’ Survey Results Reveal Substantial Heterogeneity in the Value of the Challenged “Natural” Claim Across Consumers, Suggesting that a Uniform Price Premium Is Inappropriate for Purposes of Calculating Damages**

111. Dr. Dennis’ analysis results in a single price premium for the “natural” claim on Tom’s toothpaste products ([REDACTED] percent) and Tom’s deodorant products ([REDACTED] percent).<sup>267</sup> Mr. Weir then applies these price premiums to all sales of at-issue Tom’s products in each of the

<sup>265</sup> Exhibit 22. The packaging for Tom’s Long-Lasting Deodorant in Wild Lavender was updated in 2021. In addition to changing the visual design of the package, this update removed the “natural” claim from the front of the package and added a claim that Tom’s is a Certified B Corporation. *See* <https://www.tomsofmaine.com/products/deodorant-antiperspirant/long-lasting-deodorant/wild-lavender> (viewed 8/3/2022). As shown on Exhibit 22, Dr. Dennis’ methodology implies a price premium of [REDACTED] for the “B Corp Certification” claim, implying a minimum total price premium of [REDACTED] for the label claims included on the front of the new packaging for Tom’s Long-Lasting Deodorant in Wild Lavender (or [REDACTED] percent of the base price of [REDACTED]). Calculated as [REDACTED].

<sup>266</sup> Weir Report, at ¶ 17.

<sup>267</sup> Dennis Report, at ¶¶ 74-75.

relevant states to calculate aggregate damages to the relevant classes.<sup>268</sup> As described by Mr. Weir, Dr. Dennis’ price premium factors “apply to every sale of the Products, to every Class Member, and the class period.”<sup>269</sup> According to Mr. Weir, “prices are set by the market...Just as a rising tide lifts all boats, a reduction in demand reduces prices market-wide. This is why the price premium percentages calculated by Dr. Dennis apply to all Class Members market-wide regardless of the absolute price they paid, and regardless of any individual Class Member’s subjective valuation of the Products.”<sup>270</sup> However, as described above in Section IV.D, Dr. Dennis’ price premium analysis fails to account for supply-side factors and therefore does not and cannot determine the effect of the “natural” claim on “prices market-wide.” All other flaws aside, Dr. Dennis’ “price premium” analysis can only provide an estimate of average consumer preferences and theoretical willingness to pay for the challenged “natural” claim. Mr. Weir’s damages analysis, therefore, is driven entirely by these estimates of average consumer preferences. Since Dr. Dennis gathered data and derived values on an individual basis, it is possible to look at how preferences differed across individual respondents that he claims represent the classes. My analysis of Dr. Dennis’ data reveals substantial heterogeneity in preferences for the challenged “natural” claim among his respondents, suggesting that any alleged harm caused by the inclusion of the “natural” claim varies dramatically across respondents and, as such, a uniform “price premium” is not suitable for calculating damages on a class-wide basis.

112. For example, Dr. Dennis’ partworth estimates reveal heterogeneity in preferences for the challenged “natural” claim. As summarized in Exhibits 11 and 23, approximately 22 percent of Dr. Dennis’ toothpaste survey respondents and 11 percent of Dr. Dennis’ deodorant

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<sup>268</sup> Weir Report, at ¶¶ 59-66.

<sup>269</sup> Weir Report, at ¶ 53.

<sup>270</sup> Weir Report, at ¶ 53.

survey respondents preferred the *absence* of the “natural” claim over its inclusion, all else equal. This suggests that these respondents are better off, all else equal, *after* the removal of the challenged “natural” claim. This is consistent with the results of a survey conducted by Dr. Kivetz in 2018, which found that removing the “natural” claim led to a statistically significant increase in the proportion of respondents who indicated that they would “probably” or “definitely” buy the tested Tom’s toothpaste.<sup>271</sup> Consumers who prefer a product without the “natural” claim, all else equal, were not harmed by Tom’s alleged misrepresentation and would be overcompensated by the uniform price premium approach endorsed by Dr. Dennis and Mr. Weir.

113. Further, Dr. Dennis’ conjoint results suggest a heterogeneous distribution of the relative importance of the “natural” claim compared to other attributes across respondents. That is, even among respondents who prefer the “natural” claim, there is variation in how much importance they place on the “natural” claim relative to other product attributes. As shown in Exhibit 12, for Dr. Dennis’ toothpaste survey, Dr. Dennis’ estimated partworth utilities suggest that the “natural” claim was among the top five most important attributes for approximately 7.9 percent of respondents<sup>272</sup> and was among the five least important attributes for approximately 56.5 percent of respondents.<sup>273</sup> Similarly, for Dr. Dennis’ deodorant survey, Dr. Dennis’ estimated partworth utilities suggest that the “natural” claim was among the five most important attributes for approximately 36.0 percent of respondents<sup>274</sup> and was among the five least important attributes

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<sup>271</sup> Expert Declaration of Dr. Ran Kivetz, September 21, 2018 (“Kivetz 2018 Report”), at ¶ 49. These findings are based on the results of Dr. Kivetz’s nationwide survey. Dr. Kivetz also ran a similar state-specific survey among respondents in California, New York, and Florida. The results of the state-specific survey indicate that there was no significant difference between the percentage of respondents who indicated that they would “probably” or “definitely” buy the tested Tom’s deodorant product with the “natural” claim and without the “natural” claim. Kivetz 2018 Report, at ¶ 50.

<sup>272</sup> Calculated as the sum of rows [1]-[5].

<sup>273</sup> Calculated as the sum of rows [10]-[14].

<sup>274</sup> Exhibit 24. Calculated as the sum of rows [1]-[5].

for approximately 43.4 percent of respondents.<sup>275</sup> This heterogeneity in the relative importance of the “natural” claim suggests that any alleged harm caused by the allegedly misleading “natural” claim varies across respondents and, in turn, that respondents cannot be compensated for that harm by application of a single uniform price premium.

114. In addition, Dr. Dennis’ survey data suggest a distribution of individual willingness to pay for the challenged “natural” claim across respondents. For example, as shown in Exhibit 13, Dr. Dennis’ estimated utilities suggest that approximately 23 percent of respondents to the toothpaste survey would be willing to pay between [REDACTED] for the “natural” claim,<sup>276</sup> 11 percent would be willing to pay between [REDACTED],<sup>277</sup> 25 percent would be willing to pay between [REDACTED],<sup>278</sup> and 19 percent would be willing to pay more than [REDACTED].<sup>279,280</sup> Similarly, as shown in Exhibit 25, Dr. Dennis’ estimated utilities for the deodorant survey suggest that approximately 28 percent of respondents would be willing to pay between [REDACTED] for the “natural” claim,<sup>281</sup> 22 percent would be willing to pay between [REDACTED],<sup>282</sup> 11 percent would be willing to pay between [REDACTED],<sup>283</sup> and 28 percent would be willing to pay more than [REDACTED].<sup>284</sup> Thus, Dr. Dennis’ own results suggest substantial variation in the amount that individual respondents would be willing to pay for the “natural” claim.

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<sup>275</sup> Exhibit 24. Calculated as the sum of rows [8]-[12].

<sup>276</sup> Calculated as the sum of rows [20]-[24].

<sup>277</sup> Calculated as the sum of rows [15]-[19].

<sup>278</sup> Calculated as the sum of rows [11]-[14].

<sup>279</sup> Calculated as the sum of rows [1]-[10].

<sup>280</sup> These individual willingness to pay estimates are derived directly from the partworth utility estimates generated by Dr. Dennis’ analysis. Specifically, I calculated an individual’s willingness to pay by calculating the change in utility associated with the presence of the “natural” claim vs. the absence of the “natural” claim and dividing this value by the change in utility associated with a price increase of \$1 over the range of prices tested in Dr. Dennis’ survey.

<sup>281</sup> Calculated as the sum of rows [15]-[24].

<sup>282</sup> Calculated as the sum of rows [11]-[14].

<sup>283</sup> Calculated as the sum of rows [6]-[10].

<sup>284</sup> Calculated as the sum of rows [1]-[5].



115. My analysis of individual willingness to pay estimates also further highlights the invalidity of Dr. Dennis' results. Dr. Dennis' survey results suggest that approximately 8 percent of respondents for the toothpaste survey would be willing to pay more than [REDACTED] for just the "natural" claim on toothpaste products, [REDACTED] the highest price point (for the entire product) of [REDACTED] tested in Dr. Dennis' survey.<sup>285</sup> Similarly, Dr. Dennis' survey results for the deodorant survey suggest that approximately 18 percent of respondents would be willing to pay more than [REDACTED] for the "natural" claim on deodorant products, which is [REDACTED] than the highest price point of [REDACTED] tested in the survey.<sup>286</sup> These nonsensical findings demonstrate the invalidity of Dr. Dennis' results.

116. Dr. Dennis' survey data also suggest a range of experiences and familiarity with Tom's products. For example, in Dr. Dennis' deodorant survey, approximately 10 percent of respondents indicated that they "rarely" purchased Tom's deodorants, whereas roughly 26 percent indicated that they "frequently" purchased Tom's deodorants.<sup>287</sup> Under Dr. Dennis' and Mr. Weir's logic, a consumer who rarely purchased Tom's deodorant (because, for example, they only purchased the product when it was on sale without noticing or considering the challenged "natural" claim) suffered equal harm as a consumer who frequently purchased Tom's deodorant (because, for example, they strongly prefer "natural" deodorants). Common sense suggests that these consumers were not equally harmed by the inclusion of the challenged "natural" claim. Yet, Dr. Dennis and Mr. Weir assume that each of these consumers paid the same "price premium" for the challenged "natural" claim.

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<sup>285</sup> Exhibit 13. Calculated as the sum of rows [1]-[4]. According to Dr. Dennis, the highest price point tested in his survey was "substantially higher than indicated by the average retail pricing data available to Mr. Weir and me." Dennis Report, at ¶ 71.

<sup>286</sup> Exhibit 25. Calculated as the sum of rows [1]-[3].

<sup>287</sup> Exhibit 26.

117. In sum, Dr. Dennis’ and Mr. Weir’s approach of calculating damages based on a uniform percentage of the price paid for the at-issue Tom’s toothpastes and deodorants is inconsistent with the heterogeneity demonstrated by Dr. Dennis’ own survey data, which indicates that consumers have not suffered equal harm from the inclusion of the challenged “natural” claim and therefore cannot be compensated for that harm by application of a single uniform price premium. Even if Dr. Dennis’ “price premium” calculations were valid, this evidence suggests that it cannot be applied to calculate damages on a class-wide basis.

## **V. CONCLUSION**

118. My opinions may change before trial if additional information from any of the parties-in-suit or their experts becomes available. I, therefore, reserve the right to supplement my report accordingly.



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Professor David Reibstein  
August 23, 2022